ICOM

SERVICE MANUAL

VHF FM REPEATER

IC-FR3000
IC-FR3100

Icom Inc.

INTRODUCTION

This service manual describes the latest service information for the **IC-FR3000/IC-FR3100** VHF FM REPEATER.

Model	Version	Symbol	Frequency range	AC supply	Power
IC-FR3000	U.S.A.	USA	150 –174 [MHz]	100 –120 [V]	50 [W]
	General	GEN2			
		GEN4		220 –240 [V]	50 [W]
		GEN74	148 –172 [MHz]		
IC-FR3100	Europe	EUR2	150 –174 [MHz]	220 –240 [V]	25 [W]
	Germany	FRG2			

To upgrade quality, all electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

DANGER

USE ONLY the specified AC voltage described on the AC power socket. Other voltages may causes repeater damage or personal injury.

DO NOT expose the repeater to rain, snow or any liquids.

DO NOT reverse the polarities of the power supply when connecting the repeater.

DO NOT apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the repeater's front end.



ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<SAMPLE ORDER>

1110003780	S.IC NJM2902V	IC-FR3000	LOGIC UNIT	1 piece
8930056450	2368 6-key	IC-FR3000	CHASSIS	5 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the repeater.
2. **DO NOT** open the repeater until the repeater is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the repeater is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB or 50 dB attenuator between the repeater and a deviation meter or spectrum analyser when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the repeater.

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SECTION 1 SPECIFICATIONS

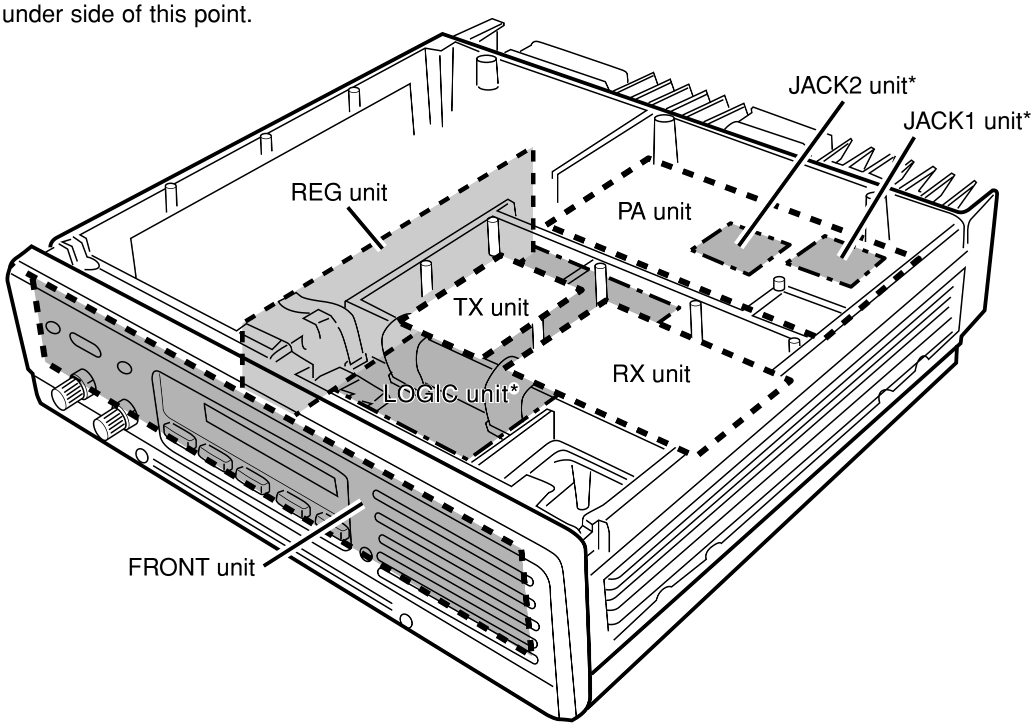
			IC-FR3000	IC-FR3100
GENERAL	Measurement method		EIA / TIA-603	ETS 300 086
	Frequency range		[USA2], [GEN2], [GEN4], [GEN74], [EUR2], [FRG2]: 150.000–174.000 MHz [GEN74]: 148.000–172.000 MHz	
	Type of emission		Wide (25 kHz): 16K0F3E Middle (20 kHz): 14K0F3E Narrow (12.5 kHz): 8K50F3E	
	Channel spacing		[USA2], [GEN2], [GEN4], [GEN74], [EUR2]: 25/12.5 kHz [FRG2]: 20/12.5 kHz	
	Frequency stability		±2.5 ppm	±1.0 kHz
	Number of channels		Max. 32 channel	
	Antenna connector		Type-N × 2 (50 Ω)	
	Power supply requirement	AC	[USA2], [GEN2]: 100–120 V [GEN4], [GEN74], [EUR2], [FRG2]: 220–240 V	
		DC	13.6 V DC (negative ground)	13.2 V DC (negative ground)
	Current drain (approx.)	TX	TX (at 50 W) 15.0 A	TX (at 25 W) 10.0 A
		RX	RX (max. audio) 2 A (stand-by) 1 A	
	Operating temperature range		–30˚C to +60˚C (–22˚F to +140˚F)	–25˚C to +55˚C
	Dimensions (proj. not included)		410(W) × 110(H) × 360(D) mm; 16.1 (W) ×4.3 (H) × 14.1 (D) inch	
	Weight (approx.)		12 kg; 26.5 lb	
TRANSMITTER	RF output power (High/Low)		50/10 W	25/5 W
	Modulation system		Variable reactance frequency modulation	
	Maximum frequency deviation		[Wide]: ±5.0 kHz, [Middle]: ±4.0 kHz, [Narrow]: ±2.5 kHz	
	Spurious emissions		70 dBc typical	0.25 μW ≤ 1GHz, 1.0 μW > 1 GHz
	Adjacent channel power		[Wide], [Middle]: 70 dB, [Narrow]: 60 dB	
	Input impedance		600 Ω	
RECEIVER	Receive system		Double-conversion superheterodyne system	
	Intermediate frequencies		1st: 31.65 MHz, 2nd: 455 kHz	
	Sensitivity (typical)		0.5 μV at 12 dB SINAD	6 dBμV (emf) at 20 dB SINAD
	Adjacent channel selectivity (typical)		[Wide], [Middle]: 70 dB, [Narrow]: 60 dB	
	Spurious response		70 dB	
	Intermodulation (typical)		70 dB	
	Audio output power		2.5 W typical at 10% distortion with a 4 Ω load	
	Audio output impedance		4 Ω	

All stated specifications are subject to change without notice or obligation.

SECTION 2 INSIDE VIEWS

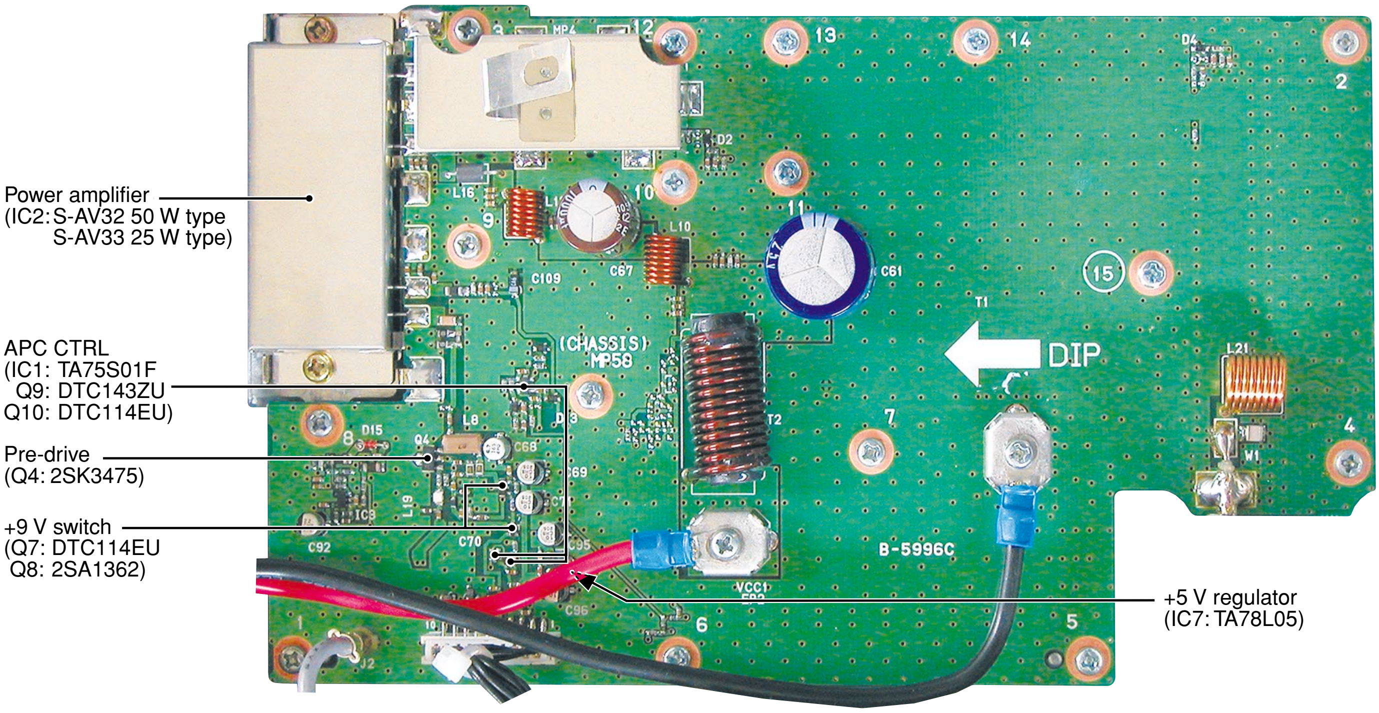
• BOARD LAYOUT

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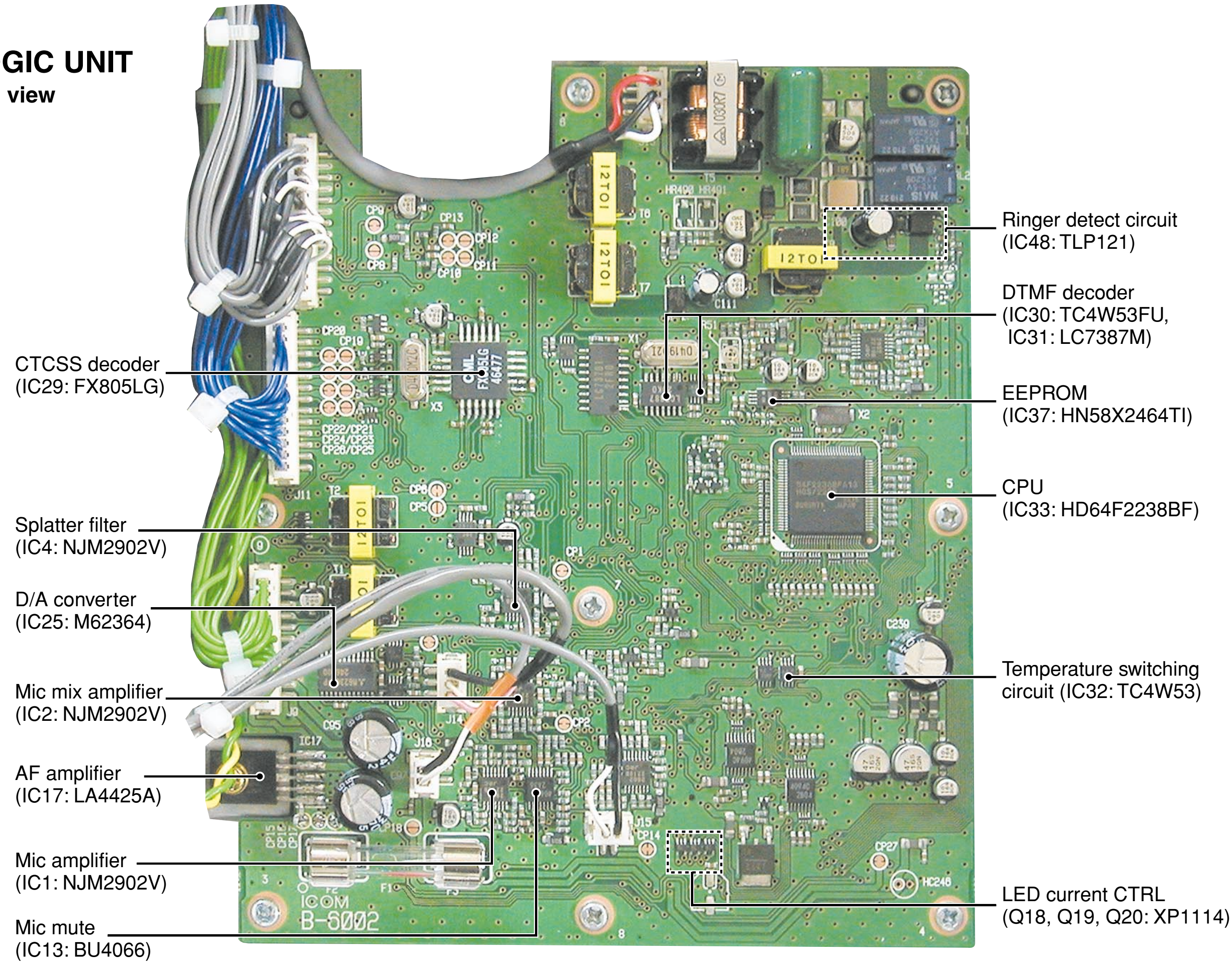
• PA UNIT

Top view

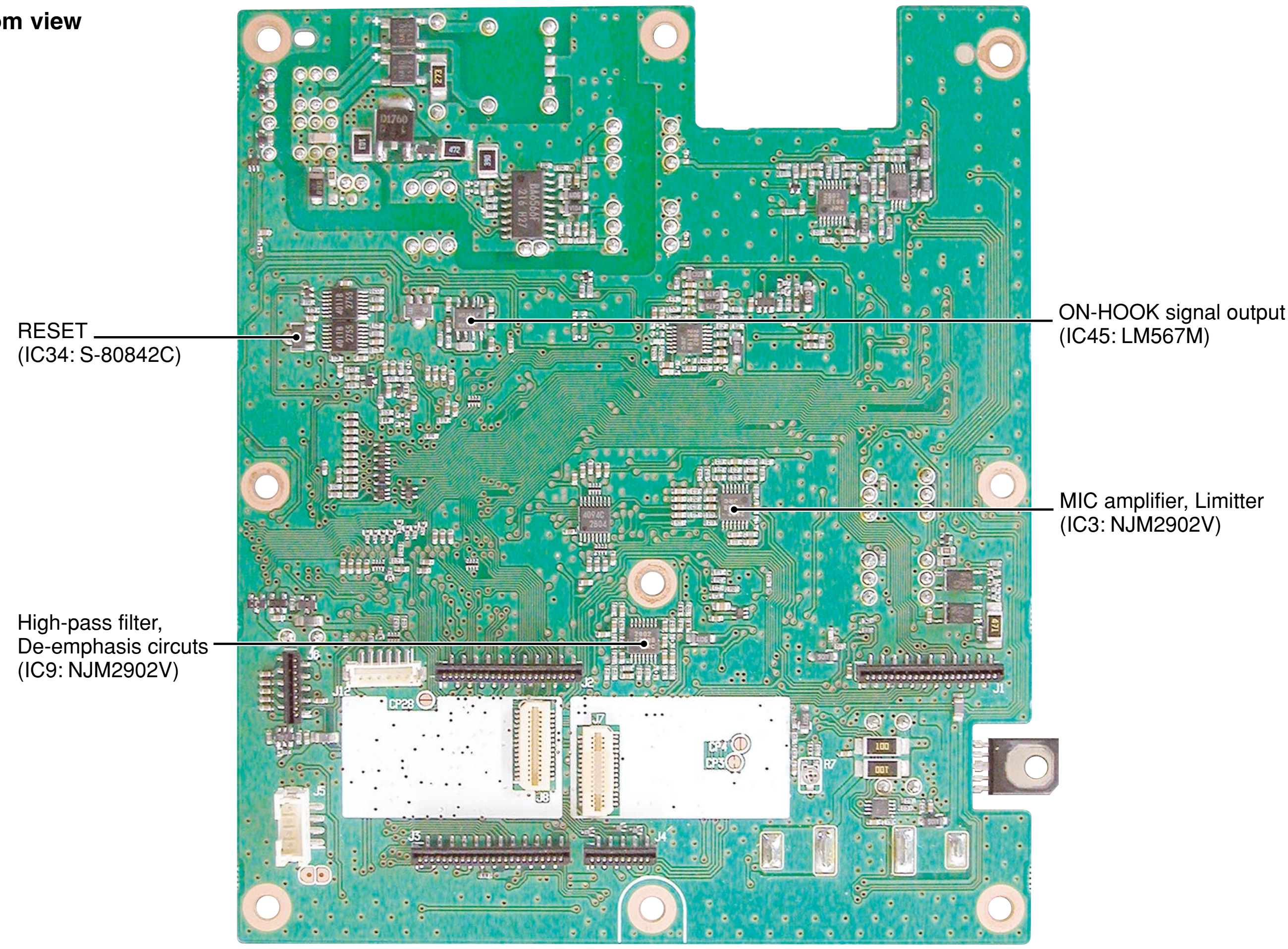


• LOGIC UNIT

Top view



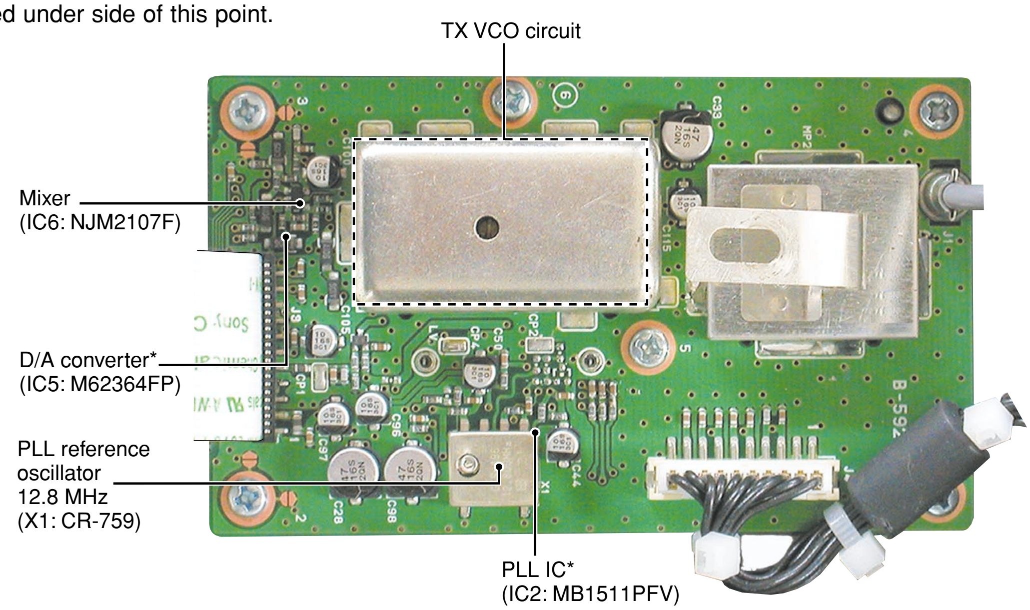
Bottom view



• TX UNIT

Top view

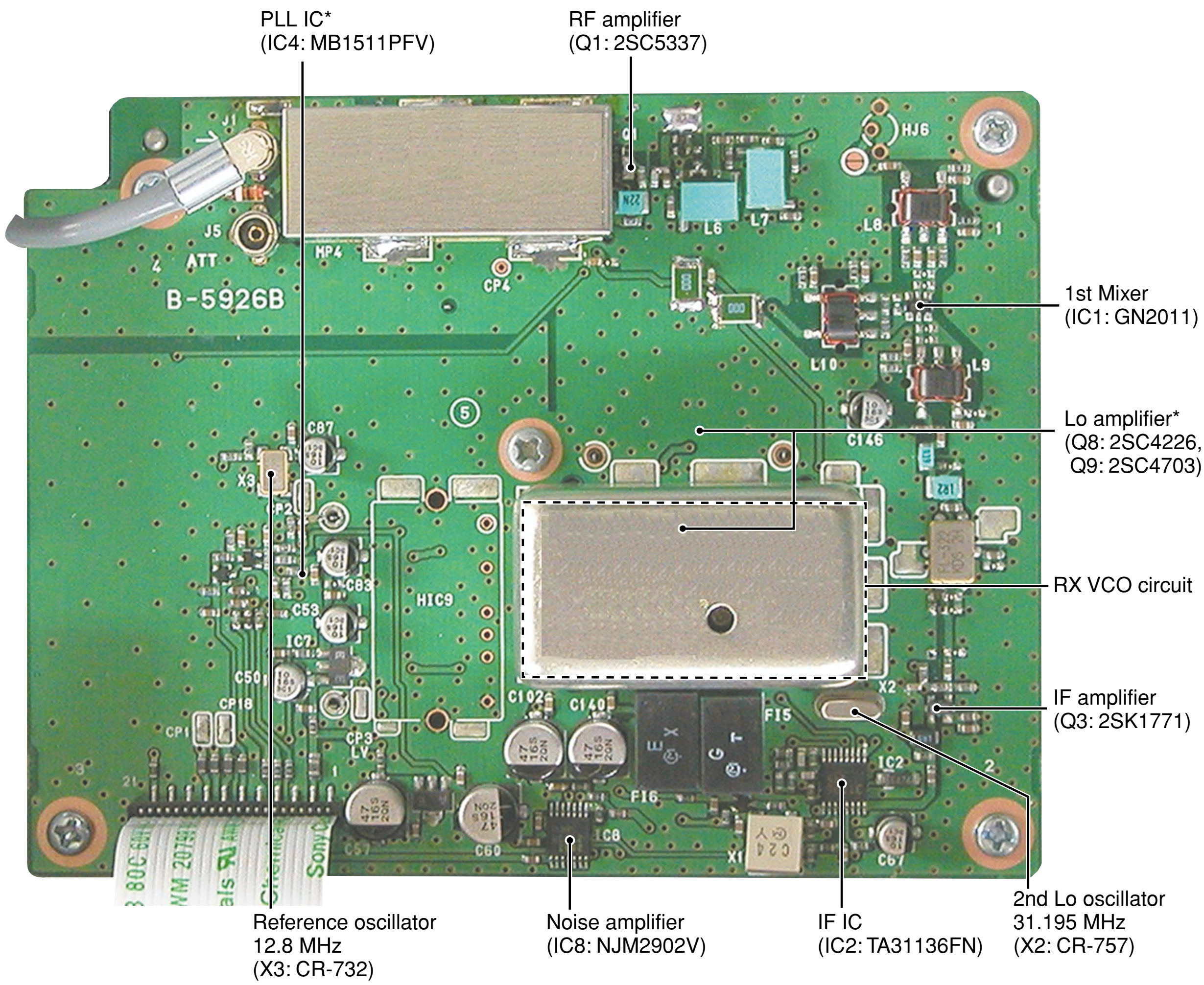
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• RX UNIT

Top view

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SECTION 3 CIRCUIT DESCRIPTION

3-1 RECEIVER CIRCUITS

3-1-1 RF CIRCUIT (RX UNIT)

Received signals from the RX antenna connector enter the RX unit J1 and pass through a tuned bandpass filter (D3, D4, L2, L3, C5–C8, C12, C13, C205, C206, C220, 221) which is controlled by the D/A converter IC (LOGIC unit; IC25). The filtered signals are applied to an RF amplifier (Q1). The amplified signals are applied to a bandpass filter (L6, L7, L12, L13, C9–C11, C14, C15, C21, C22, C24, C30, C207, C208), and are then applied to the 1st mixer circuit.

3-1-2 1ST MIXER AND 1ST IF CIRCUITS (RX UNIT)

The 1st mixer circuit converts the received signals to a fixed frequency of the 1st IF signal with the PLL output frequency. By changing the PLL frequency, only the desired frequency will pass through a crystal filter at the next stage of the 1st mixer.

The filtered signals are applied to the 1st mixer circuit (L8, L9, L10, IC1) and are then mixed with the 1st LO signal from the PLL circuit to produce a 31.65 MHz 1st IF signal.

The 1st IF signal passes through a MCF (Monolithic Crystal Filter; FI1) to suppress out-of-band signals. The filtered signal is applied to the 2nd mixer circuit (IC2, pin 16) via the buffer amplifier (Q3).

3-1-3 2ND IF AND DEMODULATOR CIRCUITS (RX UNIT)

The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal. A double-conversion superheterodyne system improves the image rejection ratio and obtains stable receiver gain.

The amplified signal is applied to the 2nd mixer section of the FM IF IC (IC2, pin 16), and is then mixed with the 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

IC2 contains the 2nd mixer, limiter amplifier, quadrature detector, active filter and noise amplifier circuits, etc. The local oscillator section and X2 generate 31.195 MHz for the 2nd LO signal.

The 455 kHz 2nd IF signal is applied to a ceramic bandpass filter (narrow; FI5, wide; FI6) where unwanted signals are suppressed and are then applied to a limiter amplifier section in the system IC (IC2, pin 5).

The 2nd LO signal is then amplified at the limiter amplifier section (IC2, pin 5) and applied to the quadrature detector section (IC2, pins 10, 11 and X1) to demodulate the 2nd IF signal into AF signals.

The AF signals are output from pin 9 (IC2) and are then applied to the AF amplifier circuit on the LOGIC unit.

3-1-5 AF AMPLIFIER CIRCUIT (LOGIC UNIT)

The AF amplifier circuit amplifies the demodulated AF signals to drive a speaker.

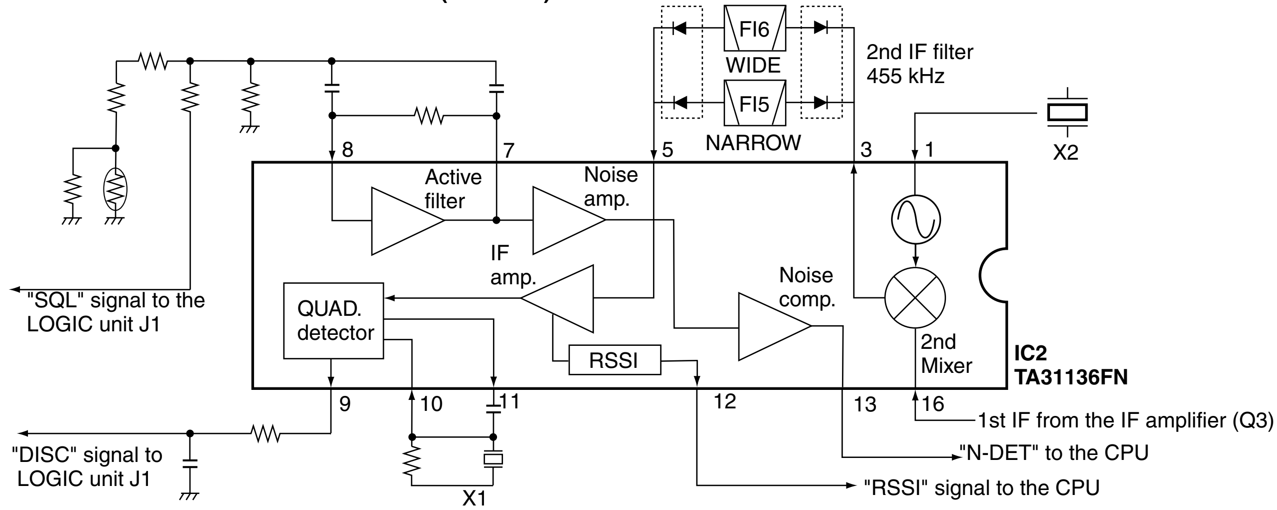
The AF signals from the FM IF IC (RX unit; IC2, pin 9) are applied to a buffer amplifier (IC9, pins 8, 9). The amplified signals pass through the high-pass filter (IC9, pins 5, 7, 12, 14) which removes CTCSS or DTCS signals.

The filtered AF signals are output from pin 7 (IC9), and are applied to the de-emphasis circuit (IC9, pins 1, 2) with frequency characteristics of –6 dB/octave, and then passed through a low-pass filter (IC10, pins 1, 3, 5, 7). The filtered signal is applied to a volume control (VR unit; R1) to control the audio level.

IC2 contains the 2nd mixer, limiter amplifier, quadrature detector, active filter and noise amplifier circuits, etc. The local oscillator section and X2 generate 31.195 MHz for the 2nd LO signal.

The output AF signals from a volume control (VR unit; R1) pass through the analog switch IC (IC16, pins 1, 7), and are then applied to the AF power amplifier (IC17, pins 1, 4) to drive a speaker.

• 2ND IF AND DEMODULATOR CIRCUITS (RX UNIT)



3-1-6 RECEIVER MUTE CIRCUITS (LOGIC UNIT)

• NOISE SQUELCH

The noise squelch circuit cuts out AF signals when no RF signals are received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switch.

Some noise components in the AF signals from the FM IF IC (RX unit; IC2, pin 9) are passed through the SQL level controller (VR unit; R2). The level controlled signals are applied to the active filter section in the FM IF IC (RX unit; IC2, pin 8). Noise components about 10 kHz are amplified and output from pin 7 (RX unit; IC2).

The filtered signals are converted to the pulse-type signals at the noise detector section and output from pin 13 (RX unit; IC2).

The NDET signal from the FM IF IC (RX unit; IC2) is applied to the CPU (IC33, pin 40). The CPU analyses the noise condition and controls the AF mute signal via "AFMUTE1" line (IC40, pin 4) to the AF mute switch (IC16, pin 5).

• TONE SIGNALS

The tone squelch circuit detects AF signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS or DTCS).

The CTCSS signal passes through a low-pass filter circuit (IC8, pins 1, 3, 5, 7, 8, 10), and is then applied to the signal amplifier (IC8, pins 13, 14). The amplified signal is applied to the CTCSS decoder IC (IC29, pin 16) and the detected signal is applied to the CPU (IC 33) via the serial signal line.

The DTCS signal passes through a low-pass filter circuit (IC12, pins 1, 3, 8, 10), and is then applied to the signal amplifier (IC12, pins 12, 14). the amplified signal is applied to the DTCS decoder which is inside the CPU (IC33, pin 52) via the "DTCSI" line.

The 2/5TONE signals are passes through a low-pass filter circuit (IC12, pins 5, 7), and are then applied to the 2/5 TONE decoder which is inside the CPU (IC33, pin 51) via "25TI" line.

The DTMF signal is pass through the DTMF switch IC (IC30 pin 7), and is then applied to the DTMF decoder(IC31). The decoded signal is applied to the CPU (IC33, pins 82, 85, 86). The CPU analyzes the DTMF signal.
The DTMF switch (IC30) selects the signal from telephone line or RX unit.

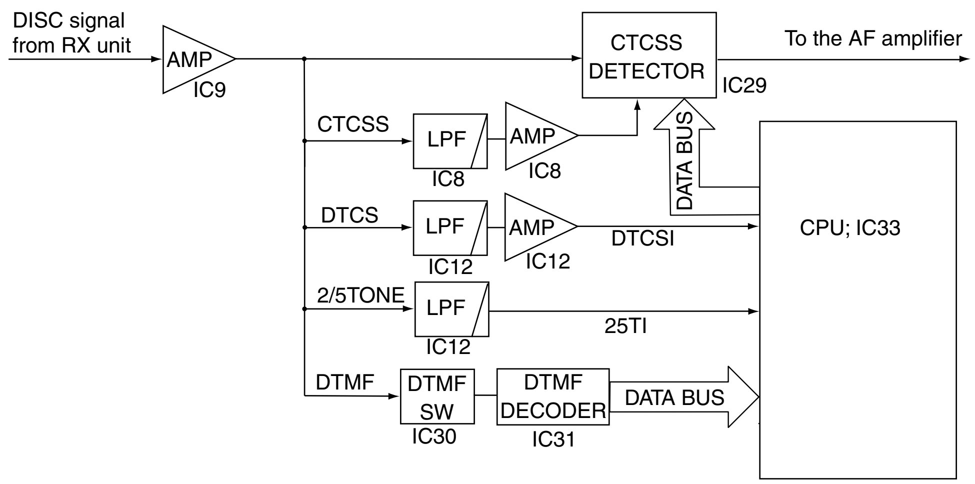
3-2 TRANSMITTER CIRCUITS

3-2-1 AF AMPLIFIER CIRCUIT (LOGIC UNIT)

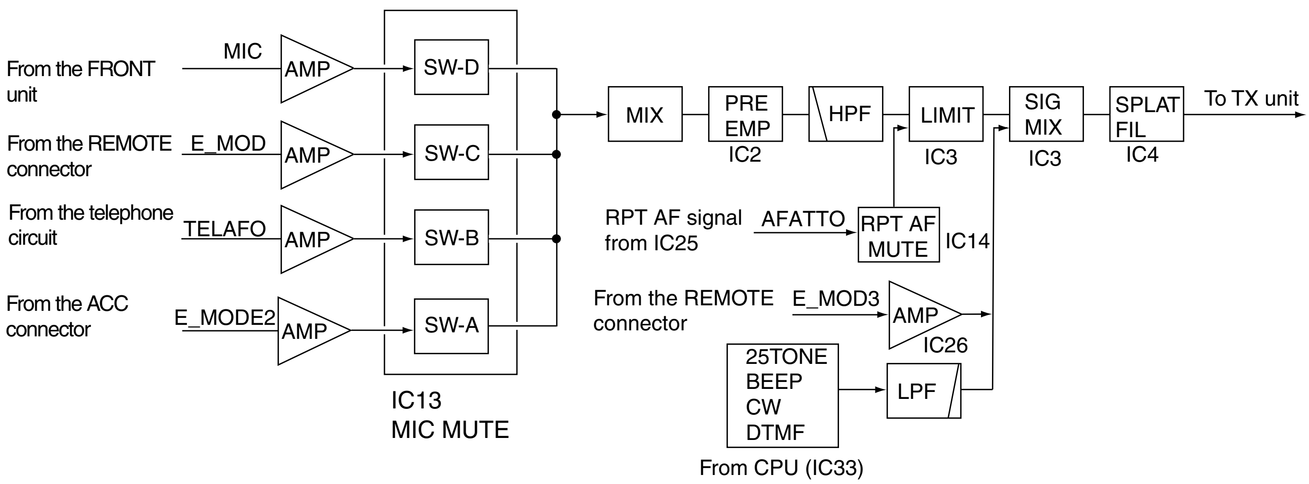
• IN CASE OF THE AF SIGNALS FROM THE MIC JACK

The AF signals from the MIC jack (FRONT unit; J7) are amplified at the AF amplifier (IC1). The amplified signals are mixed with the "E_MOD1", "E_MOD2" and "TELAFO" signals at IC2. The mixed signals pass though the high-pass filter (IC2, pins 1, 2, 6, 7) via the pre-emphasis circuit (IC2, pins 8, 9).

• TONE SIGNALS CIRCUITS (LOGIC UNIT)



• AF AMPLIFIER CIRCUITS (LOGIC UNIT)



The filtered signals are applied to the limiter amplifier (IC3), and are then mixed with the DTMF signal from the CPU (IC33, pin 43) via the TX-signal filter (IC3, pins 8, 10, 12, 14). The mixed signals are applied to the splatter filter (IC4), and are then applied to the PA unit.

• IN CASE OF THE AF SIGNALS FROM THE ANTENNA CONNECTOR

The AF signals (received signals) from the antenna connector (RX unit; J1) are applied to the buffer amplifier (IC9), CTCSS detector (IC29) and AF amplifier (IC6). The amplified signals are applied to the D/A converter IC (IC25, pins 8, 9) to adjust a repeater AF level. The adjusted AF signals pass through the RPT AF mute switch (IC14), and are applied to the limiter amplifier (IC3).

• IN CASE OF THE 2/5TONE SIGNALS

The 2/5TONE signals from the CPU (IC33, pin 43) are applied to the mixer amplifier (IC3) via TX signal filter circuit (IC3, pins 8, 10, 12, 14).

• IN CASE OF THE DTMF SIGNALS FROM DIALER IC

The DTMF from dialer IC (IC47, pin 14) are applied to the mixer amplifier (IC3) via the TX signal filter circuit (IC3, pins 8, 10, 12, 14).

• IN CASE OF THE CTCSS AND DTCS SIGNALS FROM THE CPU

The CTCSS and DTCS signals from the CPU (IC33, pin 44) are applied to the TX-tone filter (IC4, pins 12, 14). The filtered signal are applied to the D/A converter IC (TX unit; IC5 pin 9) to adjust a tone level needed, and are then mixed with AF signal at the mixer amplifier IC (TX unit; IC6).

3-2-2 MODULATION CIRCUIT (TX UNIT)

The modulation circuit modulates the VCO oscillating signal (RF signal) using the AF audio signals.

The filtered signals from the LOGIC unit are applied to the D/A converter (IC5, pin 4) to adjust AF level. The adjusted signals are applied to the mixer amplifier IC (IC6, pin 1) with the CTCSS/DTCS signals.

The mixed signals are applied to the TX VCO circuit to modulate the oscillated signal (TVCO unit; D5) and modulate the oscillated signal at VCO circuit (TVCO; Q1, D1–D4). The modulated VCO output is amplified at the buffer amplifier (Q1) and is then applied to the drive amplifier circuit on the PA unit.

3-2-3 POWER AMPLIFIER CIRCUIT (PA UNIT)

The power amplifier circuit amplifies the driver signal to an output power level.

The RF signal from the TX unit is applied to the pre-drive (Q4) to amplify the level needed at the power amplifier. The amplified signal passes through the attenuator circuit (R29–R31) and is then applied to the power amplifier (IC2).

The RF signal from the pre-drive (Q4) is applied to the power amplifier (IC2) to obtain 50 W ([IC-FR3100]: 25 W) of RF power.

The amplified signal is passed through a low-pass filter circuit (L6, L7, L20, C1–C3, C48, C73, C98, C100) and APC detector (D2, D4, R7, R8, R20, R21, R25, R26, 58, R36, R37, C78, C79), and is then applied to the TX antenna connector (CHASSIS; J1).

Control voltage for the pre-drive (Q4) and power amplifier (IC2) comes from the APC amplifier (IC1, Q9, Q10) to obtain stable output power. The transmit mute switch (Q7, Q8) controls the pre-drive (Q4) and power amplifier (IC2) when transmit mute is necessary.

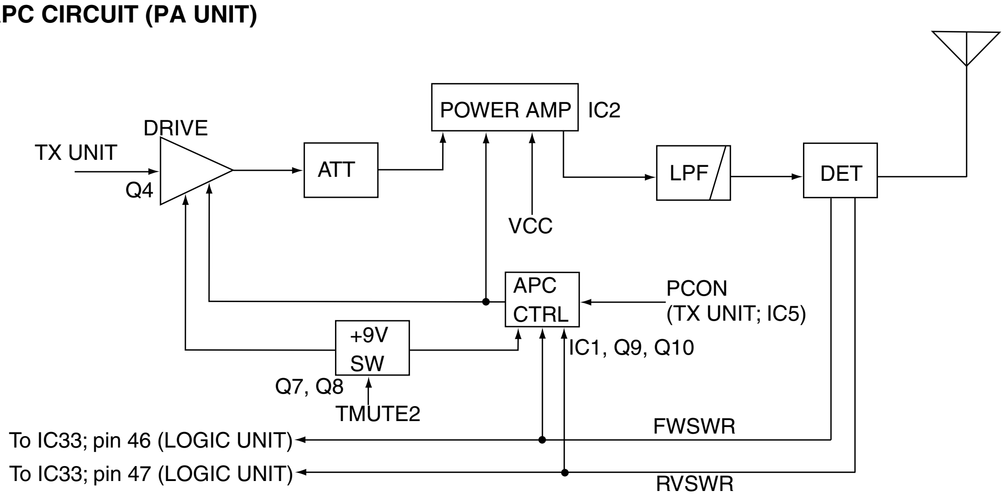
3-2-4 APC CIRCUIT (PA UNIT)

The APC circuit protects the power amplifier from a mismatched output load and stabilizes the output power.

The APC detector circuit detects forward signals and reflection signals at D2 and D4 respectively. The combined voltage become minimum level when the antenna impedance is matched at 50 Ω, and the voltage is increased when it is mismatched.

The detected voltage is applied to the APC amplifier (IC1 pin 3), and the power setting “PCON” signal from the D/A converter (TX unit; IC5), controlled by the CPU (LOGIC unit; IC33), is applied to the the APC amplifier (IC1 pin 1) for reference. When antenna impedance is mismatched, the

• APC CIRCUIT (PA UNIT)



detected voltage exceeds the power setting voltage. Then the output voltage of the APC amplifier IC (IC1, pin 4) controls the input current of the drive amplifier (Q4) and power amplifier IC (IC2, pin 2) to reduce the output power.

3-3 PLL CIRCUITS

3-3-1 GENERAL

Each receiver and transmitter circuit has an independent PLL circuit for controlling frequencies. All PLL circuits are shielded and installed on the RX and TX units.

PLL circuits steadily oscillate the transmit frequency and the receive local frequency. The PLL output frequency is controlled by divided ratio (N-data) of the programmable divider.

3-3-2 RECEIVER PLL CIRCUIT (RX UNIT)

The PLL IC (IC4) which includes in the prescaler, the programmable counter and the phase comparator generates the 1st LO frequency with the VCO circuit (RVCO unit; Q1, D1–D4). The PLL IC sets the divided ratio which bases on N-data from the CPU (LOGIC unit; IC33) to control the programmable counter. The PLL IC compares a phases of the VCO signal with the reference oscillator frequency, and is then applied to the VCO circuit (RVCO unit; Q1, D1–D4).

3-3-3 RECEIVER REFERENCE OSCILLATOR CIRCUIT (RX UNIT)

The 12.8 MHz reference frequency is produced by the oscillator (X3). The frequency is adjusted by the D/A converter IC (LOGIC unit; IC25). The reference frequency is applied to the PLL IC (IC4, pin 1).

3-3-4 RECEIVER VCO CIRCUIT (RVCO UNIT)

The VCO circuit (Q1, D1–D4) generates the receive frequency. The signal is applied to the buffer amplifier (Q2) and is then applied to the PLL IC (RX unit; IC4). The signal is amplified at the amplifiers (RX unit; Q8, Q9) and then passes through the low-pass filter (RX unit; L23, L24, L39, L53, C112–C114, C184, C216, C217) and attenuator (RX unit; R81, R136, R137). The filtered signal is applied to the 1st mixer circuit (RX unit; IC1) as 1st LO signal.
A part of the signal is applied to the PLL IC (RX unit; IC4) via the amplifier (RX unit; Q14) as RX PLL lock voltage.

3-3-5 TRANSMITTER PLL CIRCUIT (TX UNIT)

The PLL IC (IC2) which includes in the prescaler, the programmable counter and the phase comparator. The PLL IC sets the divided ratio which bases on N-data from the CPU (LOGIC unit; IC33) to control the programmable counter. The PLL IC compares a phases of the VCO signal with the reference oscillator frequency, and is then applied to the VCO circuit (TVCO unit; Q1, D1–D4).

3-3-6 TRANSMITTER REFERENCE OSCILLATOR CIRCUIT (TX UNIT)

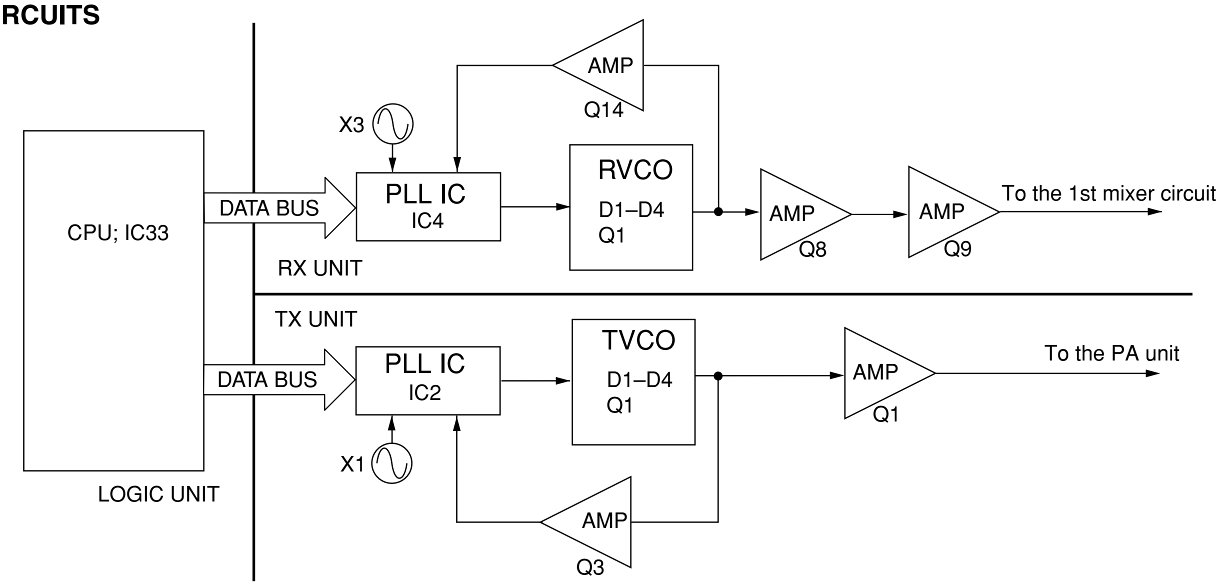
The 12.8 MHz reference frequency is produced by the oscillator (X1). The frequency is adjusted by the D/A converter IC (IC5, pin 14). The reference frequency is applied to the PLL IC (IC2, pin 1).

3-3-7 TRANSMITTER VCO CIRCUIT (TVCO UNIT)

The VCO circuit (Q1, D1–D4) generates the transmit frequency. The signal is applied to the buffer amplifier (Q2) and is then applied to the amplifier (TX unit; Q1). The amplified signal is applied to the PA unit.

A part of the signal is applied to the PLL IC (TX unit; IC2) via the amplifier (TX unit; Q3) as TX PLL lock voltage.

• PLL CIRCUITS



3-4 OTHER CIRCUITS

3-4-1 TELEPHONE IF CIRCUIT (LOGIC UNIT)

The signals from the telephone line (FRONT, J13) are applied to the ringer detect circuit (IC48, D1, D5, R131, R143, R145, C100, C103, C375). The detected signals are applied to the CPU (IC33, pin 73) via "RING" line. The "HOOKC" signal from the CPU (IC33, pin 72) and the "DP" signal from IC47 are applied to the hook switch (RL1, RL2) to off-hook.

Received AF signals from the RX unit pass through the high-pass filter (IC9, pins 5, 7, 12, 14), de-emphasis (IC9, pins 1, 2) and low-pass filter circuits (IC10, pins 1, 3, 5, 7, 8, 9). The filtered AF signals are amplified at IC7 (pins 12, 14) and are then applied to the network IC (IC46, pin 16) via T6. The output signals from IC46 are applied to the J13 (FRONT unit) via L1, L2.

AF signals from J13 (FRONT unit) are applied to the network IC (IC46, pins 8, 9). The output signals from IC46 (pins 8, 9) are applied to the AF amplifier IC (IC1, pins 1, 2) via T8. Amplified signals pass through the MIC mute switch (IC1, pins 3, 4), the MIC mixer amplifier (IC2, pins 13, 14), the pre-emphasis circuit (IC2, pins 8, 9), the high-pass filter circuit (IC2, pins 1, 2, 6, 7), limiter amplifier circuit (IC3, pins 1, 2), S-mixer circuit (IC3, pins 6, 7), and splatter filter circuit (IC4, pins 1, 3, 5, 7, 8, 10). The filtered signals are applied to the TX unit.

After off-hook condition, DTMF signal from telephone line is applied to the decoder IC (IC31) to decode the DTMF signal. The DTMF signal is applied to the CPU (IC33) via serial signal line.

The clear down signal is detected at IC45 and is then applied to the CPU (IC33). The "HOOKC" signal from the CPU (IC33, pin 72) and the "DP" signal from IC47 are applied to the hook switch (RL1, RL2) to on-hook.

3-4-2 EEPROM CIRCUIT (LOGIC UNIT)

The detector IC (IC34) detects power supply ON-OFF voltage. The signal from IC34 is applied to IC33 (CPU). IC35, IC36 are reset signal circuit which stabilizes memory data for the EEPROM (IC37).
EEPROM (IC37) memories clone data and adjust setting condition data.

3-4-3 TEMPERATURE DETECT CIRCUIT (LOGIC UNIT)

The temperature detect circuit protects the power amplifier and power supply circuit from high temperature and stabilizes the output power.
Inside temperature of the PA unit is detected at D15 (PA unit) and is then applied to the amplifier IC (PA unit; IC3). The amplified signal is applied to the CPU (IC33) to analyze the temperature via IC32.
Inside temperature of the REG unit is detected at D6 (REG unit) and is then applied to the amplifier (REG unit; IC9). The amplified signal applied to the CPU (IC33) to analyze the temperature via IC32.
IC32 selects "PATEMP" or "REGTEMP" signals from the PA or REG unit.

3-5 POWER SUPPLY CIRCUITS

3-5-1 LOGIC AND REG UNITS VOLTAGE LINES

Line	Description
PS 15V	The voltage from the DC power unit (CHASSIS; EP1).
VCC1	The same voltage as the PS 15V line which is controlled by the power switch.
M9V	Common 9 V for converted from the VCC1 line by the M9V regulator circuit (REG unit; IC1, Q8, Q9). The voltage is applied to the TX and RX units.
L9V	Common 9 V converted from the VCC1 line by the L9V regulator circuit (REG unit; IC2).
A5V	Common 5 V converted from the L9V line by the A5V regulator circuit (REG unit; IC3).
L5V	Common 5 V converted from the L9V line by the L5V regulator circuit (LOGIC unit; IC38, Q48, D43).
C5V	Common 5 V converted from the L9V line by the C5V regulator circuit (LOGIC unit; IC38, Q45, D13).
TEL5V	Common 5 V converted from the M9V line by the TEL5V regulator circuit (LOGIC unit; IC11).

3-5-2 RX UNIT VOLTAGE LINES

Line	Description
+5V	Common 5 V converted from the M9V line by the +5V regulator circuit (RX unit; IC3).
+6V	Common 6 V converted from the M9V line by the +6V regulator circuit (RX unit; IC7).
R5V	Receive 5 V converted from the R9V line by the R5V regulator circuit (RX unit; IC6).
R9V	Receive 9 V controlled by the R9V regulator circuit (RX unit; Q15) using "R9C" signal from IC39 (LOGIC unit).
V9V	Common 9 V converted from the M9V line by the V9V regulator circuit (RX unit; Q24).

3-5-3 TX UNIT VOLTAGE LINES

Line	Description
T5V	Transmit 5 V converted from the M9V line by the T5V regulator circuit (TX unit; IC1).
T6V	Transmit 6 V converted from the M9V line by the T6V regulator circuit (TX unit; IC4).
V9V	Common 9 V converted from the M9V line by the V9V regulator circuit (TX unit; Q6).

3-6 PORT ALLOCATIONS

3-6-1 EXPANDER IC (LOGIC UNIT; IC39)

Pin number	Port name	Description
4	BASL	Outputs the control signal for “BASE” LED on the FRONT unit.
5	RMTL	Outputs the control signal for “REMOTE” LED on the FRONT unit.
6	BUSYL	Outputs the control signal for “BUSY” LED on the FRONT unit.
7	TXL	Outputs the control signal for “TX” LED on the FRONT unit.
12	D5C	Outputs the control signal for the D5V on the FRONT unit.
13	PROGL	Outputs the control signal for “P” LED on the FRONT unit.
14	DCL	Outputs the control signal for “DC” LED on the FRONT unit.

3-6-2 EXPANDER IC (LOGIC UNIT; IC40)

Pin number	Port name	Description
4	AFMUTE1	Outputs the speaker mute signal for the received AF.
5	AFMUTE2	Outputs the speaker mute signal for the received 2/5TONE and DTMF signals.
6	MICMUTE1	Outputs the MIC mute signal for the hand microphone.
7	MICMUTE2	Outputs the MIC mute signal for the REMOTE connector.
11	TELBMR	Outputs the pulse control signal for the telephone dialer IC
12	TELMUTE2	Outputs the MOD mute signal for AF signal from the telephone line.
13	TELMUTE1	Outputs the telephone mute signal for the received AF signal.
14	MICMUTE3	Outputs the MIC mute signal for the ACC connector.

3-6-3 EXPANDER IC (LOGIC UNIT; IC41)

Pin number	Port name	Description
5	R/BSW	Outputs the switch control signal for the received AF signal to the microphone amplifier.
6	W/NS	Outputs the control signal for narrow/wide bands.
7	R9C	Outputs the control signal for the +9V regulator on the RX unit.
12	M9C	Outputs the control signal for the M9V regulator on the Rx unit and TX unit.
13 14	OPT1 OPT3	Output the detection signals whether optional boards are installed or not.

3-6-4 D/A CONVERTER IC (LOGIC UNIT; IC25)

Pin number	Port name	Description
6	DA2STB	Input port for the strobe signal.
7	SCK	Input port for the clock signal.
8	SDTO	Outputs the serial data to the CPU (LOGIC unit; IC33).
9	AFFTTI	Input port for the received AF signal.
10	AFATTO	Outputs the adjusted AF signal for the repeater output.
14	RVCON	Outputs the adjustment signal for the PLL reference frequency on the RX unit.
15	TUNE	Outputs the BPF tuning signal to the RX unit.

3-6-5 D/A CONVERTER IC (TX UNIT; IC5)

Pin number	Port name	Description
1	ETONE	Input port for the TONE signal from the ACC connector.
2	ETONEO	Outputs the adjusted external TONE signal.
3	TXAFO	Outputs the TX AF signal to the TX modulation.
4	TXAF	Input port for the AF signal.
6	DA1STB	Input port for the strobe signal.
7	SCK	Input port for the clock signal.
8	SDTO	Outputs the serial data signal to the CPU (LOGIC unit; IC33).
9	TONE	Input port for the TONE signal.
10	TONEO	Outputs the adjusted TONE signal.
11	PCON	Outputs the TX power control signal.
14	TVCON	Outputs the adjustment signal for the TX unit PLL reference frequency.
15	MODC	Outputs the control signal for modulation balance.
21	MIXO	Input port for the mixed signal with the external signal, TX AF signal and internal signals.
22	REFMOD	Outputs the adjustment signal for TONE balance.
23	MOD	Outputs the adjusted AF signal for the TX modulation.
24	MIXO	Input port for the mixed signal with the ETONE, TX AF and TONE signals.

3-6-6 CPU (LOGIC UNIT; IC33)

Pin number	Port name	Description
1	RPLSTB	Outputs the strobe signal for the PLL IC on the RX unit.
2	TPLSTB	Outputs the strobe signal for the PLL IC on the TX unit.
3	TUNLK	Input port for the unlock signal from the PLL IC on the TX unit.
4	TMUTE	Outputs the TX mute signal for the TX unit.
5	TMUTE2	Outputs the TX mute signal for the PA unit.
8	M_PTT	Input port for the PTT switch signal from the microphone.
9	SPMUTE	Input port for [SPMUTE] switch.
10	REMOTE	Input port for [REMOTE] switch.
11	R/B	Input port for [R/B] switch.
13	MBEEP	Outputs the BEEP signal for modulation.
15	MONI	Input port for [MONI] switch.
16	CHUP	Input port for [CHUP] switch.
17	CHDN	Input port for [CHDN] switch.
18	DISP	Input port for [DISP] switch.
19	PROG	Input port for [PROG] switch.
26	COAXSW	Outputs the antenna switching signal.
27	CWO	Outputs the CW signal for transmit.
28	KBEEP	Outputs the beep audio signals to the speaker.
29	M/SO	Outputs the master/slave switching signal.
30	M/SI	Input port for the master/slave switching signal.
33	E_PTT	Input port for the PTT signal form the REMOTE connector.
34	E_PT2	Input port for PTT signal from the ACC connector.
35–39	D0–D4	Input port for the memory channel control signal.
40	NDET	Input port for the noise signal from the FM IF IC (RX unit; IC2).
41	SW	Outputs the temperature or PLL lock voltage switching signal.
43	2/5T DTMFO	Outputs the 2/5TONE and DTMF signals.
44	CTDTO	Outputs the CTCSS/DTCS signals.
45	PSD	Input port for the detection signal from the REG unit.
46	FWSWR	Input port for FW SWR signal from the PA unit.

CPU-Continued

Pin number	Port name	Description
47	RVSWR	Input port for the RV SWR signal from the PA unit.
48	TEMP	Input port for the temperature signals of PA and REG units.
49	T/RLV	Input port for the VCO lock voltage to the TX and RX unit.
50	RSSI	Input port for the RSSI signal from the FM IF IC (RX unit; IC2).
51	25TI	Input port for the 2/5TONE signals.
52	DTCSI	Input port for the DTCS signal.
68	TEL-BUSY	Input port for the busy signal from the pulse tone dialer IC (LOGIC unit; IC47).
69	MCK	Outputs the serial clock signal for the EEPROM (LOGIC unit; IC37).
70	MDT	I/O port for the serial data signal from/to the EEPROM (LOGIC unit; IC37).
71	TELSTB	Outputs strobe signal for the pulse tone dialer IC (LOGIC unit; IC47).
72	HOOKC	Outputs the ON/OFF HOOK control signal for the telephone line.
73	RING	Input port for the ringer detecting signal from the telephone line.
74	SHIFT	Outputs the control signal for the clock shift circuit.
75	INT	Input port for the power supply detection signal.
76	TXDTO	Outputs the serial data signal to the ACC connector.
77	RXDTO	Input port for the serial data signal from the ACC connector.
78	DTSEL1	Outputs the control signal for the DTMF SW IC (LOGIC unit; IC50).
79	TXDT1	Outputs the clone data signal.
80	RXDT1	Input port for the clone data signal.
81	DTSEL2	Outputs the control signal for the DTMF SW IC (LOGIC unit; IC30).
82	DTSTD	Input port for the TONE detecting signal from the DTMF decoder IC (LOGIC unit; IC31).
85	DTMFD	Input port for the data decoding signal from the DTMF decoder IC (LOGIC unit; IC31).
86	DTACK	Outputs the clock signal for the DTMF decoder IC (LOGIC unit; IC31).
87	ONHOOK	Input port for the detection signal of the ON-HOOK signal.
88	IOE	Outputs the control signal for the port expander IC (LOGIC unit; IC39–IC41).

CPU-Continued

Pin number	Port name	Description
89	PE3STB	Outputs the strobe signal for the port expander IC (LOGIC unit; IC41).
90	PE2STB	Outputs the strobe signal for the port expander IC (LOGIC unit; IC40).
91	PE1STB	Outputs the strobe signal for the port expander IC (LOGIC unit; IC39).
95	D2STB	Outputs the strobe signal for the D/A converter IC (LOGIC unit; IC25).
96	D1STB	Outputs the strobe signal for the D/A converter IC (TX unit; IC5).
97	SDTO	Outputs the serial data signal for the PLL IC (RX unit; IC4, TX unit; IC2), dialer IC (LOGIC unit; IC47), port expander IC (LOGIC unit; IC39–IC41) and optional boards.
98	SCK	Outputs the clock signal for the PLL IC (RX unit; IC4, TX unit; IC2), dialer IC (LOGIC unit; IC47), port expander IC (LOGIC unit; IC39–IC41) and optional boards.
99	RUNLK	Input port for the unlock signal from the PLL IC (RX unit; IC4).
100	C/DSW	Outputs the control signal for the TX-TONE filter (LOGIC unit; IC4).

SECTION 4 ADJUSTMENT PROCEDURES

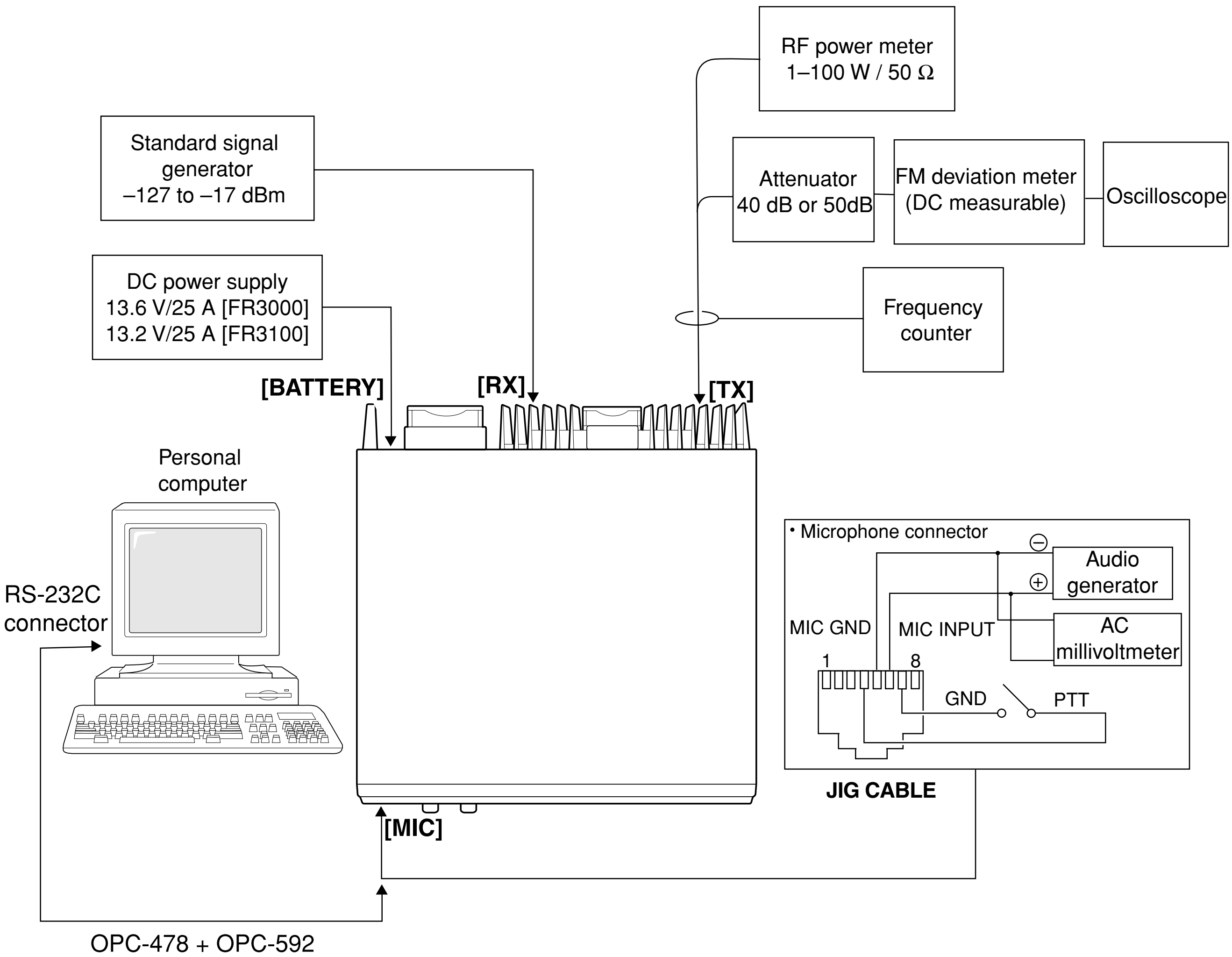
4-1 PREPARATION

Some adjustments must be performed on the "ADJUSTMENT MODE". CS-FR3000 CLONING SOFTWARE, OPC-478 CLONING CABLE and OPC-592 ADAPTOR CABLE are required when entering the adjustment mode. Refer to the next page in detail.

■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.6 V DC [FR3000] 13.2 V DC [FR3100] Current capacity : 25 A or more	Audio generator	Frequency range : 300–3000 Hz Output level : 1–500 mV
RF power meter (terminated type)	Measuring range : 1–100 W Frequency range : 100–300 MHz Impedance : 50 Ω SWR : Less than 1.2 : 1	Attenuator	Power attenuation : 40 or 50 dB Capacity : 100 W or more
		Standard signal generator (SSG)	Frequency range : 120–600 MHz Output level : 0.1 μV–32 mV (–127 to –17 dBm)
Frequency counter	Frequency range : 0.1–600 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better	AC millivoltmeter	Measuring range : 10 mV–10 V
		Oscilloscope	Frequency range : DC–20 MHz Measuring range : 0.01–20 V
FM deviation meter	Frequency range : DC–600 MHz Measuring range : 0 to ±5 kHz	Digital multimeter	Input impedance : 10 MΩ/V DC or better

• **CONNECTION**



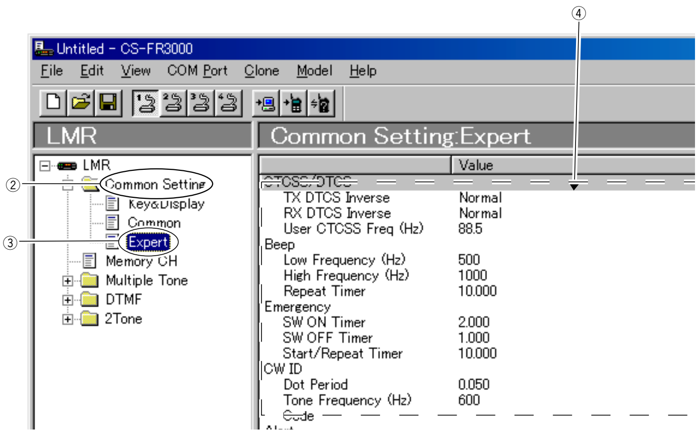
■ BEFORE ENTERING THE ADJUSTMENT MODE

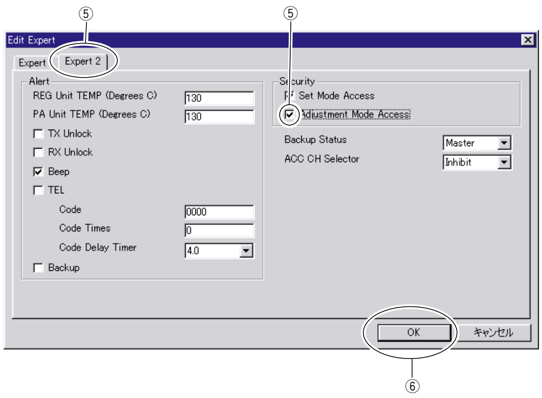
CAUTION!: Need to back up the original memory data using CS-FR3000 before cloning the adjustment frequencies.
When program the adjustment frequencies into the repeater, the repeater's memories channels will be overwritten the data and deleted original memory data at the same time.

Need to do cloning "Adjustment Mode Access" permitting and adjustment frequency into the CPU using CS-FR3000 before entering the adjustment mode. Otherwise, the repeater can not enter the adjustment mode.

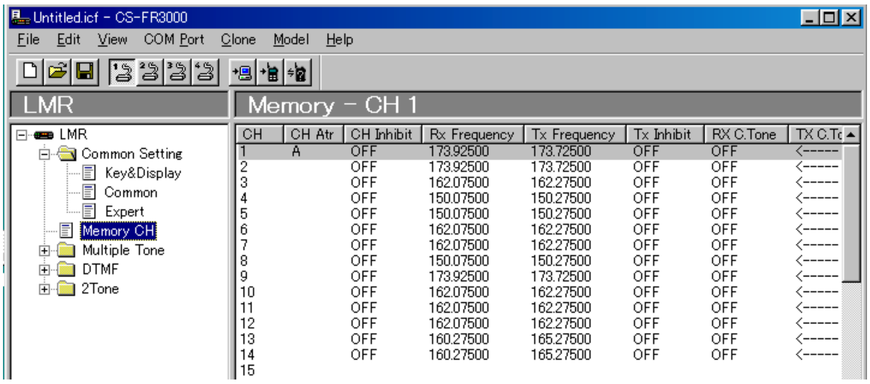
■ PROCESS TO THE PERMIT "ADJUSTMENT MODE ACCESS"

① Run the CS-FR3000 CLONING SOFTWARE.
② Open the "Common Setting" folder .
③ Click the "Expert" card on the tree view window.
④ Double-click somewhere on the Common setting screen window, then appear the "Edit Expert" window.
⑤ Click the "Expert 2" tab, then click the "Adjustment Mode Access" check box.
⑥ Click "OK" button.
⑦ Click the "Memory CH" card on the tree view window.
⑧ Input adjustment frequencies as following page 4-4.
⑨ Cloning to the repeater then the repeater can be enter the adjustment mode.
Show the next page to enter the adjustment mode.



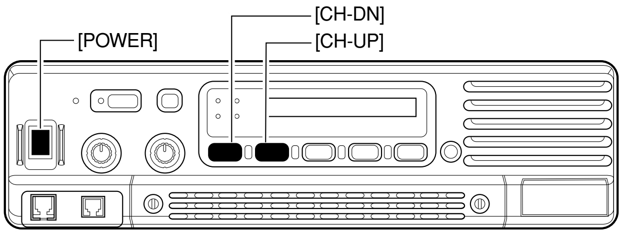


MEMORY CHANNEL SCREEN (Sample only)



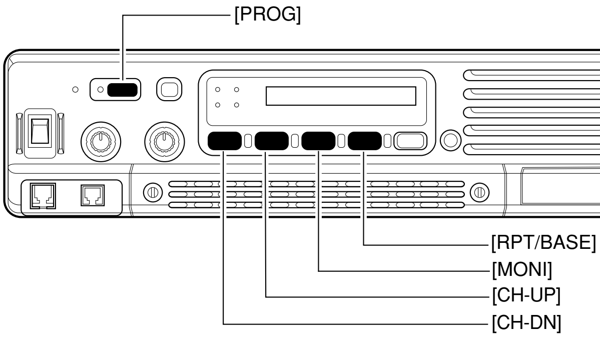
■ ENTERING THE ADJUSTMENT MODE

① Turn the power OFF.
② While pushing and holding both [CH-DN] and [CH-UP], turn ON. Never release [CH-DN] and [CH-UP] until 1 short beep sounds.
③ Push [CH-DN] button, then sounds 2 beep audio.



■ OPERATING IN THE ADJUSTMENT MODE

- Change the item (including frequency) (+1). : Push [CH-UP] button.
- Change the item (including frequency) (–1). : Push [CH-DN] button.
- Adjust the specified value (+1). : Push [PRT/BASE] button.
- Adjust the specified value (–1). : Push [MONI] button.
- Change the TX and RX's condition. : Push [PROG] button.
  Change the condition TX reference frequency to RX reference frequency.
  Change the condition TX "HIGH POWER" to TX "LOW POWER".



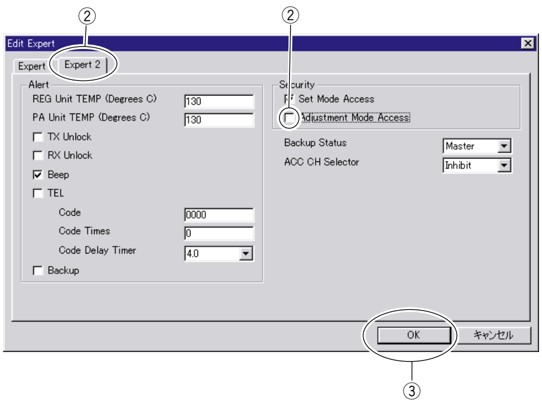
■ EXITING THE ADJUSTMENT MODE

① Turn the power OFF.
② While pushing and holding and [CH-UP], turn ON. Never release [CH-UP] until 1 short beep sounds.
③ Push [CH-UP] button, then sounds 2 beep audio.

■ AFTER FINISHING ADJUSTMENT

CAUTION!: When the adjustment is finished, the repeater need to be canceled adjustment mode. Otherwise the repeater does not work properly.

① Perform the step ① to ④, described in the PROCESS TO PERMIT "ADJUSTMENT MODE ACCESS" (see page 4-2).
② Click the "EXPERT 2" tag, then clear the check box for the "Adjustment Mode Access".
③ Click "OK" button, then cloning with the original memory data.

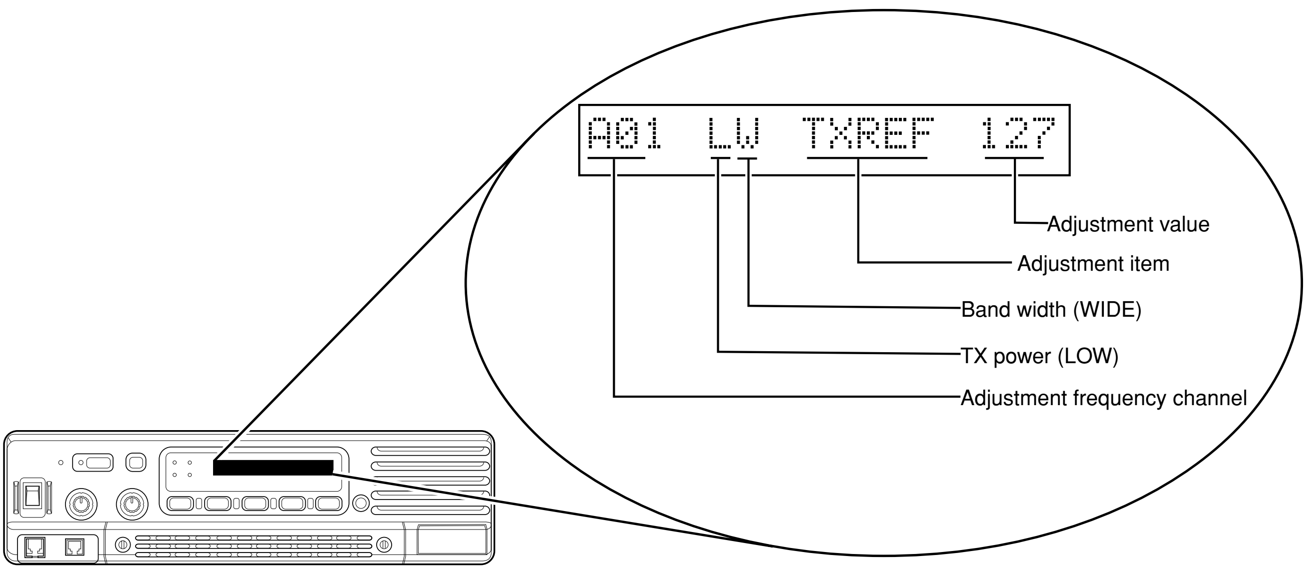


■ ADJUSTMENT MODE CH LIST

CH	[Other] (MHz)	[GEN74] (MHz)	LCD DISPLAY	W/N	ADJUSTMENT
A01	173.925 (RX) 173.725 (TX)	171.925 (RX) 171.725 (TX)	A01 LW TXREF 127	W	TVCO/RVCO adjustment. Reference frequency adjustment.
A02	173.925 (RX) 173.725 (TX)	171.925 (RX) 171.725 (TX)	A02 LW HRTUN 115	W	RX sensitivity adjustment.
A03	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A03 LW MRTUN 088	W	RX sensitivity adjustment.
A04	150.075 (RX) 150.275 (TX)	148.075 (RX) 148.275 (TX)	A04 LW LRTUN 055	W	RX sensitivity adjustment.
A05	150.075 (RX) 150.275 (TX)	148.075 (RX) 148.275 (TX)	A05 LW RPTSQL 150	W	RPT SQL adjustment.
A06	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A06 HW POWER 166	W	TX power adjustment.
A07	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A07 LW M DEV 143	W	TX modulation adjustment.
A08	150.075 (RX) 150.275 (TX)	148.075 (RX) 148.275 (TX)	A08 LW LMODC 073	W	TX modulation adjustment.
A09	173.925 (RX) 173.725 (TX)	171.925 (RX) 171.725 (TX)	A09 LW HMODC 191	W	TX modulation adjustment.
A10	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A10 LW CTCDEV 134	N	CTCSS modulation adjustment.
A11	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A11 LW DTCADJ 159	W	DTCS modulation adjustment.
A12	162.075 (RX) 162.275 (TX)	160.075 (RX) 160.275 (TX)	A12 LN CTCDEV 062	N	CTCSS modulation adjustment. (NARROW)
A13	160.275 (RX) 165.275 (TX)	158.275 (RX) 163.275 (TX)	A13 LW RPTAF 141	W	RPT modulation adjustment. (WIDE)
A14	160.275 (RX) 165.275 (TX)	158.275 (RX) 163.275 (TX)	A14 LN RPTAF 126	N	RPT modulation adjustment. (NARROW)

[Other]: 150–174 MHz version, [GEN74]: 148–172 MHz version
LCD display's detail as shown below. A number of 3 figures is a adjustment value (sample).

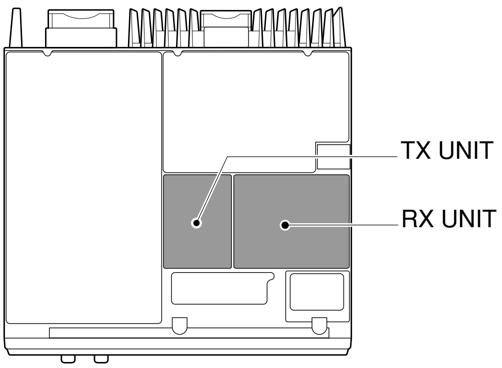
■ EXPLANATION OF LCD DISPLAY IN THE ADJUSTMENT MODE



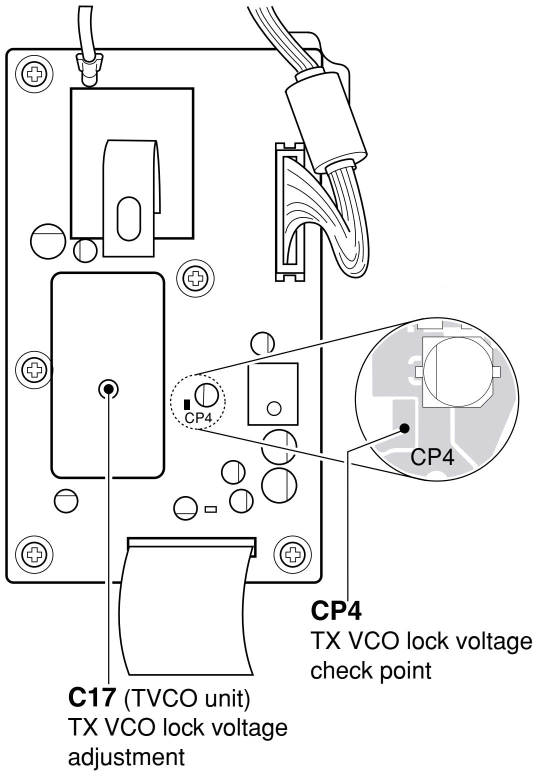
4-2 PLL ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
			UNIT	LOCATION		UNIT	ADJUST
TX VCO LOCK VOLTAGE	1	• LCD display : A01 LW TXREF 127 • Transmitting	TX	Connect the digital multi meter or oscillo-scope to check point CP4.	4.0 V	TVCO	C17
RX VCO LOCK VOLTAGE	1	• LCD display : A01 LW TXREF 127 • Receiving	RX	Connect the digital multi meter or oscillo-scope to check point CP3.	4.0 V	RVCO	C17
REFERENCE FREQUENCY	1	• Wait for 5 minutes after power ON. • LCD display : A01 LW TXREF Connect the RF power meter or 50 Ω dummy load to the [TX] antenna con-nector. • Transmitting	REAR panel	Loosely couple a fre-quency counter to the [TX] antenna connec-tor.	171.7250 MHz [GEN74] 173.7250 MHz [Other]	FRONT	[PRT/BASE]/[MONI]
	2	• Push the [PROG] button • LCD display : A01 LW RXREF • Receiving	RX	Connect the frequency counter to check point CP2.	140.2750 MHz [GEN74] 142.2750 MHz [Other]	FRONT	[PRT/BASE]/[MONI]

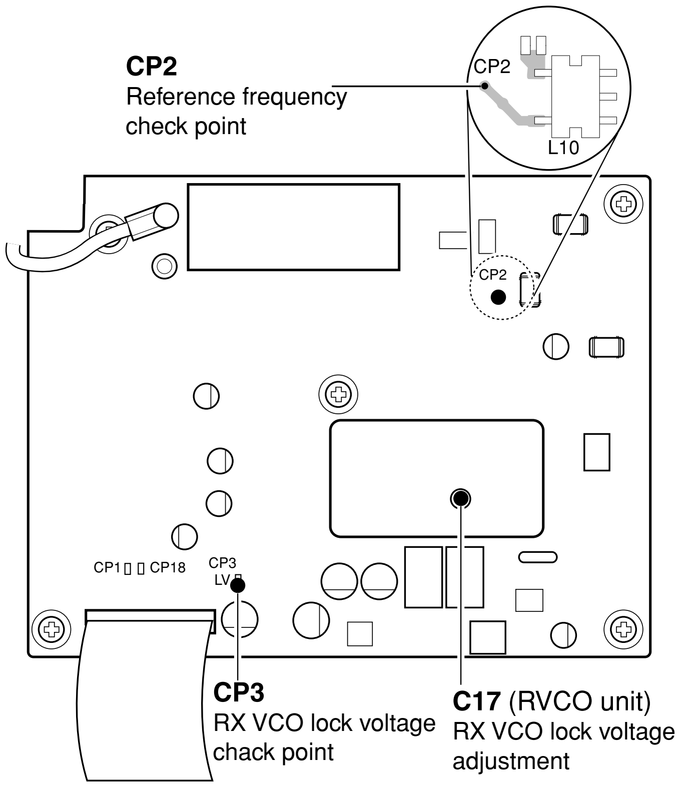
• **IC-FR3000 TOP VIEW**



• **TX UNIT TOP VIEW**



• **RX UNIT TOP VIEW**



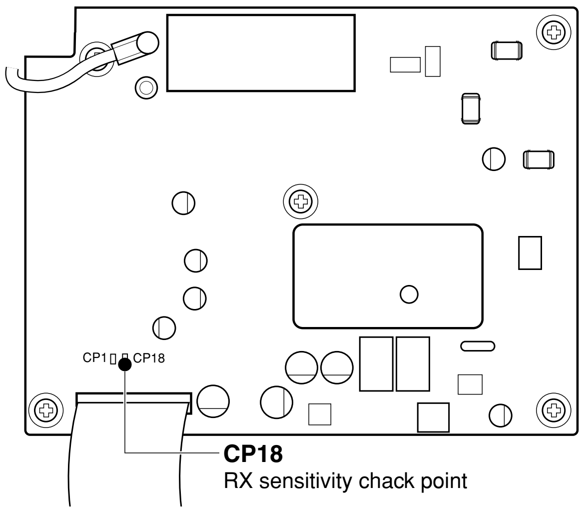
4-3 SOFTWARE ADJUSTMENT

Select an item using [CH-UP] / [CH-DN] buttons, then set specified value using [RPT/BASE] / [MONI] buttons on the FRONT PANEL.

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE
			UNIT	LOCATION	
RX SENSITIVITY (HIGH FRQ.)	1	• LCD display : A02 LW HRTUN • Connect the standard signal generator to the [RX] antenna connector and set as: Frequency : 171.9250 MHz [GEN74] 173.9250 MHz [Other] Level : 32 μV* (–77 dBm) Modulation : 1 kHz Deviation : ±3 kHz • Receiving	RX	Connect the digital multi meter or oscilloscope to check point CP18.	Maximum voltage
(MID FRQ.)	2	• LCD display : A03 LW MRTUN • Connect the standard signal generator to the [RX] antenna connector and set as: Frequency : 160.0750 MHz [GEN74] 162.0750 MHz [Other] • Receiving			Maximum voltage
(LOW FRQ.)	3	• LCD display : A04 LW LRTUN • Connect the standard signal generator to the [RX] antenna connector and set as: Frequency : 148.0750 MHz [GEN74] 150.0750 MHz [Other] • Receiving			Maximum voltage
REPEATER SENSITIVITY		• LCD display : A05 LW RPTSQL • Connect a standard signal generator to the [RX] antenna connector and set as: • Connect the RF power meter or 50 Ω dummy load to the [TX] antenna connector. Frequency : 148.0750 MHz [GEN74] 150.0750 MHz [Other] Level : 0.2 μV* (–121 dBm) [Other] : 0.32 μV* (–117 dBm) [EUR2], [FRG2] Modulation : 1 kHz Deviation : ±3 kHz [Other] : ±2.4 kHz [FRG2] • Receiving	FRONT	Speaker	Squelch open

*The output level of the standard signal generator (SSG) is indicated as the SSG's open circuit.

• RX UNIT TOP VIEW



SOFTWARE ADJUSTMENT – continued

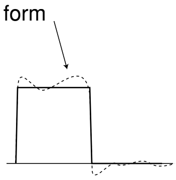
Select an item using [CH-UP] / [CH-DN] buttons, then set specified value using [RPT/BASE] / [MONI] buttons on the FRONT PANEL.

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE
			UNIT	LOCATION	
OUTPUT POWER (HI)	1	• LCD display : A06 HW POWER • Operating freq. : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • Connect the RF power meter to the [TX] antenna connector. • Transmitting	Rear panel	Connect the RF power meter to the [TX] antenna connector.	50.0 W [Other] 25.0 W [EUR2], [FRG2]
(LOW)	2	• Push the [PROG] button • LCD display : A06 LW POWER • Operating freq. : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • Transmitting			10.0 W [Other] 5.0 W [EUR2], [FRG2]
DEVIATION		• LCD display : A07 LW M DEV • Operating freq. : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • IF bandwidth : Wide • Connect the audio generator to the [MIC] jack through the JIG cable and set as: 1.0 kHz/40 mVrms • Set an FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P–P)/2 • Transmitting	Rear panel	Connect the FM deviation meter to the [TX] antenna connector through the attenuator.	±4.4 kHz [Other] ±3.5 kHz [FRG2]
MODULATION BALANCE (LOW FRQ.)	1	• LCD display : A08 LW LMODC • Operating freq. : 148.2750 MHz [GEN74] 150.2750 MHz [Other] • IF bandwidth : Wide • Connect the audio generator to the [MIC] jack through the JIG cable and set as: 1.0 kHz/40 mVrms • Set an FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P–P)/2 • Transmitting	Rear panel	Connect the FM deviation meter to the [TX] antenna connector through the attenuator.	±4.4 kHz [Other] ±3.5 kHz [FRG2]
(HIGH FRQ.)	2	• LCD display : A09 LW HMODC • Operating freq. : 171.7250 MHz [GEN74] 173.7250 MHz [Other] • Transmitting			±4.4 kHz [Other] ±3.5 kHz [FRG2]

*The output level of the standard signal generator (SSG) is indicated as the SSG's open circuit.

SOFTWARE ADJUSTMENT – continued

Select an item using [CH-UP] / [CH-DN] buttons, then set specified value using [RPT/BASE] / [MONI] buttons on the FRONT PANEL.

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE
			UNIT	LOCATION	
CTCSS DEVIATION (WIDE)	1	• LCD display : A10 LW CDCDEV • Operating freq. : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • Set the FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P–P)/2 • No audio applied to the [MIC] connector. • Transmitting	Rear panel	Connect the FM deviation meter to the [TX] antenna connector through the attenuator.	±0.65 kHz [Other] ±0.52 kHz [FRG2]
(NARROW)	2	• LCD display : A12 LN CTCDEV • Operating freq : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • No audio applied to the [MIC] connector. • Transmitting			±0.35 kHz
DTCS MODULATION BALANCE		• LCD display : A11 LW DTCADJ • Operating freq. : 160.2750 MHz [GEN74] 162.2750 MHz [Other] • No audio applied to the [MIC] connector. • Transmitting.	Rear panel	Connect the FM deviation meter with an oscilloscope to the [TX] antenna connector through the attenuator.	Set to flat wave form 
REPEATER DEVIATION (WIDE)	1	• LCD display : A13 LW RPTAF • Operating freq : 158.2750 MHz (RX) [GEN74] 160.2750 MHz (TX) [GEN74] 160.2750 MHz (RX) [Other] 162.2750 MHz (TX) [Other] • Connect the standard signal generator to the RX antenna connector and set as: Level : 1 mV* (–47 dBm) Modulation : 1 kHz Deviation : ±3 kHz [Other] : ±2.4 kHz [FRG2] • Transmitting	Rear panel	Connect the FM deviation meter to the [TX] antenna connector through the attenuator.	±3.0 kHz [Other] ±2.4 kHz [FRG2]
(NARROW)	2	• LCD display : A14 LN RPTAF • Operating freq : 158.2750 MHz (RX) [GEN74] 160.2750 MHz (TX) [GEN74] 160.2750 MHz (RX) [Other] 162.2750 MHz (TX) [Other] • Transmitting			±1.5 kHz

*The output level of the standard signal generator (SSG) is indicated as the SSG's open circuit.

SECTION 5 PARTS LIST

[REG UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1180001320	IC	NJM7809FA	T
IC2	1180002290	S.IC	NJM7809DL1A-TE	B
IC3	1180001860	S.IC	TA78M05F (TE16L)	B
IC4	1180002480	S.REG	TA78DL12AF (TE16L)	T
IC6	1180001540	S.IC	TA78L08F (TE12R)	B
IC7	1110002860	S.IC	TA75S393F (TE85R)	T
IC9	1110002400	S.IC	NJM2107F-TE1	T
IC11	1110002750	S.IC	TA75S01F (TE85R)	T
Q1	1590003110	FET	2SJ533	T
Q4	1590003110	FET	2SJ533	T
Q5	1540000550	S.TRANSISTOR	2SD1664 T100Q	T
Q7	1590001940	S.TRANSISTOR	DTC144EE TL	B
Q8	1590003030	S.FET	2SJ553STR	B
Q9	1590001940	S.TRANSISTOR	DTC144EE TL	B
D2	1750000550	S.DIODE	1SS355 TE-17	B
D3	1790000700	DIODE	DSA3A1	T
D4	1710001170	DIODE	FCH30A03L	T
D6	1790000720	DIODE	MA29W-B	T
D7	1710001170	DIODE	FCH30A03L	T
D8	1730002340	S.ZENER	MA8047-M (TX)	B
R3	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R14	7100000830	RESISTOR	5SG 3.3 Ω	T
R16	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	B
R17	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	B
R18	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R19	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R23	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	T
R24	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	B
R27	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	B
R30	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R31	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R32	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R33	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	T
R34	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R35	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	T
R36	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R37	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R38	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R39	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R40	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R41	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R42	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R58	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R59	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R60	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R61	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R62	7030010510	S.RESISTOR	ERJ1TYJ 8R2U (8.2 Ω)	B
R64	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	B
R65	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R66	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	T
R67	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R68	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C5	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C6	4510007690	ELECTROLYTIC	LXZ25VB2200	T
C7	4510007690	ELECTROLYTIC	LXZ25VB2200	T
C9	4510007690	ELECTROLYTIC	LXZ25VB2200	T
C11	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C17	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C19	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C20	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C22	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C23	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C24	4550006770	S.TANTALUM	TEESVD2 1C 476M-12R	T
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C26	4510007660	ELECTROLYTIC	LXZ25VB100	T
C27	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C28	4510007650	S.ELECTROLYTIC	EEVHB1C470P	T
C29	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C31	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C33	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C34	4510007570	S.ELECTROLYTIC	EEVHB1C220UR	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[REG UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C35	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C36	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C37	4510007660	ELECTROLYTIC	LXZ25VB100	T
C38	4510007660	ELECTROLYTIC	LXZ25VB100	T
C41	4510007570	S.ELECTROLYTIC	EEVHB1C220UR	T
C42	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C43	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C45	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C47	4510007660	ELECTROLYTIC	LXZ25VB100	T
C48	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C49	4510007570	S.ELECTROLYTIC	EEVHB1C220UR	T
C50	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C51	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C52	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
RL2	6330001680	RELAY	ACB32101	T
J13	6510018970	S.CONNECTOR	B4B-PH-SM3-TB	T
J14	6510022620	S.CONNECTOR	10FMN-BMTTR-A-TBT	T
J16	6510018960	S.CONNECTOR	B2B-PH-SM3-TB	T
J17	6510018960	S.CONNECTOR	B2B-PH-SM3-TB	T
J18	6510018960	S.CONNECTOR	B2B-PH-SM3-TB	T
F1	5220000300	HOLDER	1A5600	T
F2	5220000300	HOLDER	1A5600	T
F3	5210000850	FUSE	ATC-20	T
F4	5220000300	HOLDER	1A5600	T
F5	5220000300	HOLDER	1A5600	T
F6	5210000850	FUSE	ATC-20	T
S1	2260001510	SWITCH	RXE160	T
W1	7120000490	JUMPER	ERD25T0	T
W2	7120000490	JUMPER	ERD25T0	T
W3	7120000490	JUMPER	ERD25T0	T
W4	7120000490	JUMPER	ERD25T0	T
EP1	0910056242	PCB	B 5998B	
EP2	6910012350	S.BEAD	MMZ1608Y 102BT	T
EP3	6910011340	TERMINAL	OT-010 M3	T
EP4	6910011340	TERMINAL	OT-010 M3	T
EP5	6910011340	TERMINAL	OT-010 M3	T
EP6	6910011340	TERMINAL	OT-010 M3	T
EP7	6910011340	TERMINAL	OT-010 M3	T
EP8	6910011340	TERMINAL	OT-010 M3	T
EP9	6910011340	TERMINAL	OT-010 M3	T
EP10	6910011340	TERMINAL	OT-010 M3	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
Q1	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
D1	1750000930	S.DIODE	NNCD8.2C-T1	T
D2	1750000930	S.DIODE	NNCD8.2C-T1	T
D3	1750000930	S.DIODE	NNCD8.2C-T1	T
L1	6200001620	S.COIL	ELJFC 1R0K-F	T
R1	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R2	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R3	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R8	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)	B
R9	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)	B
R10	7030001160	S.RESISTOR	MCR50JZHJ 180 Ω (181)	B
R11	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)	B
R12	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)	B
R13	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)	B
R15	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	B
R17	7030008220	S.RESISTOR	MCR100JZHJ 47 Ω (470)	B
R18	7030008220	S.RESISTOR	MCR100JZHJ 47 Ω (470)	B
R19	7540000240	S.ABSORBER	KU10R29N-4063	T
R21	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R22	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R23	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R24	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R26	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R27	7030010910	S.RESISTOR	ERJ1TYJ 150U (15 Ω)	B
R28	7030010910	S.RESISTOR	ERJ1TYJ 150U (15 Ω)	B
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C2	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C3	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C5	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C12	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C17	4030017200	S.CERAMIC	GRM31BR32J102KY01L	T
C18	4030017200	S.CERAMIC	GRM31BR32J102KY01L	T
C19	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C20	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
J1	6510022620	S.CONNECTOR	10FMN-BMTTR-A-TBT	B
J2	6510022580	S.CONNECTOR	24FMN-BMTTR-A-TBT	B
J3	6510021600	S.CONNECTOR	S2B-PH-SM3-TB	B
J4	6510022910	CONNECTOR	IMSA9201B-1-16Z012Z	T
J6	6510022790	CONNECTOR	95003-2641	T
J7	6450001470	CONNECTOR	95003-2881	T
J8	6510023250	S.CONNECTOR	S3B-PH-SM3-TB	B
J9	6510021600	S.CONNECTOR	S2B-PH-SM3-TB	B
F1	5210000890	FUSE	SBR-1A [USA2]	B
DS1	5040001820	LED	BG3889S	T
DS2	5040001820	LED	BG3889S	T
DS3	5040001330	LED	BR3889S	T
DS4	5040001820	LED	BG3889S	T
DS5	5040001820	LED	BG3889S	T
DS6	5040001820	LED	BG3889S	T
DS7	5030002190	LCD	MSC-C161UYLY-4W	T
S1	2260001680	S.SWITCH	SKQDPB	T
S2	2260001680	S.SWITCH	SKQDPB	T
S3	2260001680	S.SWITCH	SKQDPB	T
S4	2260001680	S.SWITCH	SKQDPB	T
S5	2260001680	S.SWITCH	SKQDPB	T
S6	2260001680	S.SWITCH	SKQDPB	T
S7	2260001680	S.SWITCH	SKQDPB	T
S8	2260001680	S.SWITCH	SKQDPB	T
W1	7030003860	S.RESISTOR	ERJ3GE JPW V [GEN2], [GEN4], [GEN74], [EUR2], [FRG2]	T
EP1	0910056251	PCB	B 5997A	
EP2	6910014560	SPACER	LM-15	T
EP3	6910014550	SPACER	LM-13	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
EP4	6910014540	SPACER	LM-10	T
EP5	6910014540	SPACER	LM-10	T
EP6	6910014540	SPACER	LM-10	T
EP7	6910014540	SPACER	LM-10	T

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1110003780	S.IC	NJM2902V-TE1	T
IC2	1110003780	S.IC	NJM2902V-TE1	T
IC3	1110003780	S.IC	NJM2902V-TE1	B
IC4	1110003780	S.IC	NJM2902V-TE1	T
IC6	1110002400	S.IC	NJM2107F-TE1	T
IC7	1110003780	S.IC	NJM2902V-TE1	B
IC8	1110003780	S.IC	NJM2902V-TE1	B
IC9	1110003780	S.IC	NJM2902V-TE1	B
IC10	1110003780	S.IC	NJM2902V-TE1	T
IC11	1180000420	S.IC	TA78L05F (TE12R)	B
IC12	1110003780	S.IC	NJM2902V-TE1	T
IC13	1130008090	S.IC	BU4066BCFV-E1	T
IC14	1130004200	S.IC	TC4S66F (TE85R)	T
IC16	1130006220	S.IC	TC4W53FU (TE12L)	B
IC17	1110003090	IC	LA4425A	T
IC20	1130006220	S.IC	TC4W53FU (TE12L)	T
IC21	1130006220	S.IC	TC4W53FU (TE12L)	T
IC25	1190001350	S.IC	M62364FP 600D	T
IC26	1110003800	S.IC	NJM2904V-TE1	B
IC28	1110002400	S.IC	NJM2107F-TE1	B
IC29	1190001720	S.IC	FX805LG	T
IC30	1130006220	S.IC	TC4W53FU (TE12L)	T
IC31	1130007400	S.IC	LC7387M-TRM	T
IC32	1130006220	S.IC	TC4W53FU (TE12L)	T
IC33	1140010140	S.IC	HD64F2238BFA13	T
IC34	1110005710	S.IC	S-80842CLUA-B63-T2	B
IC35	1130009320	S.IC	BU4011BFV-E2	B
IC36	1130009320	S.IC	BU4011BFV-E2	B
IC37	1140008650	S.IC	HN58X2464TI	T
IC38	1180002250	S.IC	S-812C50AMC-C3E-T2	B
IC39	1130007570	S.IC	BU4094BCFV-E2	T
IC40	1130007570	S.IC	BU4094BCFV-E2	B
IC41	1130007570	S.IC	BU4094BCFV-E2	T
IC42	1170000280	S.IC	TLP121 (GB-TPL)	B
IC43	1170000280	S.IC	TLP121 (GB-TPL)	B
IC44	1120002830	S.IC	NJM2125F-TE1	T
IC45	1110005000	S.IC	LMC567CM	B
IC46	1190001740	S.IC	BA6566F-E2	B
IC47	1190001730	S.IC	LC73701M-TLM	T
IC48	1170000280	S.IC	TLP121 (GB-TPL)	T
IC49	1170000280	S.IC	TLP121 (GB-TPL)	T
IC50	1130006220	S.IC	TC4W53FU (TE12L)	T
IC51	1110002400	S.IC	NJM2107F-TE1	T
IC52	1110005690	S.IC	NJM2520V-TE1	T
IC53	1130006220	S.IC	TC4W53FU (TE12L)	T
Q1	1590001400	S.TRANSISTOR	XP1214 (TX)	B
Q2	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q3	1590001940	S.TRANSISTOR	DTC144EE TL	B
Q4	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q5	1510000510	S.TRANSISTOR	2SA1576A T106R	T
Q6	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q7	1590001400	S.TRANSISTOR	XP1214 (TX)	B
Q8	1590003210	S.TRANSISTOR	XP1111 (TX)	B
Q9	1590003210	S.TRANSISTOR	XP1111 (TX)	B
Q10	1590003210	S.TRANSISTOR	XP1111 (TX)	B
Q11	1590003210	S.TRANSISTOR	XP1111 (TX)	B
Q17	1590001940	S.TRANSISTOR	DTC144EE TL	T
Q18	1590002010	S.TRANSISTOR	XP1114 (TX)	T
Q19	1590002010	S.TRANSISTOR	XP1114 (TX)	T
Q20	1590002010	S.TRANSISTOR	XP1114 (TX)	T
Q24	1550000020	S.FET	2SJ377 (TE16R)	T
Q25	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q26	1590001960	S.TRANSISTOR	XP4311 (TX)	T
Q27	1590001960	S.TRANSISTOR	XP4311 (TX)	T
Q28	1590001960	S.TRANSISTOR	XP4311 (TX)	T
Q29	1590001960	S.TRANSISTOR	XP4311 (TX)	T
Q37	1590001940	S.TRANSISTOR	DTC144EE TL	B
Q38	1590001400	S.TRANSISTOR	XP1214 (TX)	B
Q40	1590001940	S.TRANSISTOR	DTC144EE TL	B
Q44	1590002430	S.TRANSISTOR	DTA144EE TL	B
Q45	1510000590	S.TRANSISTOR	2SA1362-Y (TE85L)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION			M.
Q48	1160000150	S.TRANSISTOR	IMZ4 T108		B
Q49	1590001960	S.TRANSISTOR	XP4311 (TX)		T
Q50	1590001960	S.TRANSISTOR	XP4311 (TX)		T
Q51	1540000570	S.TRANSISTOR	2SD1760 TLQ	[FR3100]	B
Q52	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)	[FR3100]	B
D1	1730002650	S.ZENER	PTZ TE25 36B		B
D4	1710001180	S.BRIDGE	D1UBA80-4062		B
D5	1710001180	S.BRIDGE	D1UBA80-4062		B
D6	1790001250	S.DIODE	MA2S111-(TX)		B
D7	1790001250	S.DIODE	MA2S111-(TX)		T
D8	1790001250	S.DIODE	MA2S111-(TX)		B
D9	1790001250	S.DIODE	MA2S111-(TX)		B
D10	1790001250	S.DIODE	MA2S111-(TX)		B
D11	1790001250	S.DIODE	MA2S111-(TX)		B
D12	1790001250	S.DIODE	MA2S111-(TX)		B
D13	1790000670	S.DIODE	SB07-03C-TB		B
D14	1790001260	S.DIODE	MA2S077-(TX)		B
D15	1790001250	S.DIODE	MA2S111-(TX)		B
D16	1790001250	S.DIODE	MA2S111-(TX)		B
D17	1790001250	S.DIODE	MA2S111-(TX)		B
D18	1790001250	S.DIODE	MA2S111-(TX)		B
D19	1790001250	S.DIODE	MA2S111-(TX)		T
D20	1790001250	S.DIODE	MA2S111-(TX)		T
D21	1790001250	S.DIODE	MA2S111-(TX)		T
D22	1790001250	S.DIODE	MA2S111-(TX)		T
D23	1790001250	S.DIODE	MA2S111-(TX)		B
D24	1790001250	S.DIODE	MA2S111-(TX)		B
D25	1790001250	S.DIODE	MA2S111-(TX)		B
D26	1790001250	S.DIODE	MA2S111-(TX)		B
D27	1790001250	S.DIODE	MA2S111-(TX)		B
D28	1750000550	S.DIODE	1SS355 TE-17		B
D29	1750000550	S.DIODE	1SS355 TE-17		B
D33	1790001250	S.DIODE	MA2S111-(TX)		B
D38	1730002640	S.ZENER	PTZ TE25 13B		T
D43	1790001250	S.DIODE	MA2S111-(TX)		B
D44	1790001250	S.DIODE	MA2S111-(TX)		B
D45	1790001250	S.DIODE	MA2S111-(TX)		B
D46	1790001250	S.DIODE	MA2S111-(TX)		B
X1	6050011490	S.XTAL	CR-733 (4.194304 MHz)		T
X2	6050011000	S.XTAL	CR-681 (12.288 MHz)		T
X3	6050009300	S.XTAL	CR-505 (4 MHz)		T
L1	6200009790	S.COIL	BLM31PG121SN1		T
L2	6200009790	S.COIL	BLM31PG121SN1		T
L3	6200009790	S.COIL	BLM31PG121SN1		T
L4	6200009790	S.COIL	BLM31PG121SN1		T
L5	6200009790	S.COIL	BLM31PG121SN1		B
L6	6200009790	S.COIL	BLM31PG121SN1		T
L7	6200009790	S.COIL	BLM31PG121SN1		T
L8	6200009790	S.COIL	BLM31PG121SN1		T
L9	6200009790	S.COIL	BLM31PG121SN1		T
L10	6200009790	S.COIL	BLM31PG121SN1		B
L11	6200009790	S.COIL	BLM31PG121SN1		B
R2	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R3	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)		T
R5	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)		T
R6	7030003710	S.RESISTOR	ERJ3GEYJ 184 V (180 kΩ)		T
R7	7310004790	S.TRIMMER	EVM-3YSX50 B14 (103)		B
R8	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)		T
R9	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)		T
R10	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		T
R12	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)		T
R13	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)		T
R14	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		T
R15	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R16	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R17	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		T
R18	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R19	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R22	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		B
R23	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)		B
R24	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		B
R25	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		B
R26	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)		T
R27	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)		T
R28	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)		T
R29	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)		T
R30	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)		T
R31	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)		T
R32	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)		T
R33	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R34	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R35	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R36	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R37	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R40	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R48	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R50	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R51	7310004790	S.TRIMMER	EVM-3YSX50 B14 (103)	T
R52	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	T
R53	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	T
R54	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R55	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R56	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R57	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R58	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R59	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R60	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R61	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R62	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R63	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R64	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R65	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R66	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)	B
R67	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	B
R68	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R69	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R70	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	B
R71	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R72	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R74	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R75	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	B
R77	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R78	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	B
R79	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R80	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R81	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R82	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R83	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R84	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R85	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R86	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R87	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R88	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R89	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R90	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R91	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R92	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R94	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R95	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R96	7030003690	S.RESISTOR	ERJ3GEYJ 124 V (120 kΩ)	B
R97	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R98	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R99	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R100	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R101	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R102	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R103	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R104	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)	B
R105	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R106	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R107	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	T
R108	7030003710	S.RESISTOR	ERJ3GEYJ 184 V (180 kΩ)	T
R109	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	T
R112	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R113	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R114	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)	B
R115	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	B
R116	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R117	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	B
R118	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R119	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R121	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	B
R122	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)	B
R123	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R124	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R127	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R128	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R129	7030006480	S.RESISTOR	MCR100JZHJ 10 Ω (100)	B
R130	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R131	7030001430	S.RESISTOR	MCR50JZHJ 27 kΩ	B
R137	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R138	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R139	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R140	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R141	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R143	7030000410	S.RESISTOR	MCR10EZHJ 1.8 kΩ	B
R144	7030000480	S.RESISTOR	MCR10EZHJ 6.8 kΩ	T
R145	7030000410	S.RESISTOR	MCR10EZHJ 1.8 kΩ	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R148	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	T
R149	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R150	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R151	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R153	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R154	7030008350	S.RESISTOR	ERJ12YJ390U	B
R155	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R158	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	B
R159	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	B
R160	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	B
R162	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ) [FR3000]	B
	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ) [FR3100]	B
R163	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	B
R164	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R165	7030003690	S.RESISTOR	ERJ3GEYJ 124 V (120 kΩ)	T
R166	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)	B
R168	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R169	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)	B
R170	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R171	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R172	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R175	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R177	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R179	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	B
R182	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R183	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R184	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R185	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	B
R186	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	B
R187	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	T
R188	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	T
R189	7410001130	S.ARRAY	EXB28V102JX	T
R190	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R191	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R192	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)	B
R193	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R194	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)	B
R195	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R196	7410001150	S.ARRAY	EXB28V471JX	T
R197	7410001150	S.ARRAY	EXB28V471JX	T
R198	7410001130	S.ARRAY	EXB28V102JX	B
R199	7410001130	S.ARRAY	EXB28V102JX	T
R200	7410001150	S.ARRAY	EXB28V471JX	T
R201	7410001130	S.ARRAY	EXB28V102JX	T
R202	7410001150	S.ARRAY	EXB28V471JX	T
R203	7410001130	S.ARRAY	EXB28V102JX	T
R204	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R205	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R206	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R207	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	T
R208	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R209	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R210	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R211	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R212	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R213	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R214	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R215	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R216	7410001130	S.ARRAY	EXB28V102JX	T
R217	7410001130	S.ARRAY	EXB28V102JX	B
R218	7410001130	S.ARRAY	EXB28V102JX	T
R219	7410001130	S.ARRAY	EXB28V102JX	T
R220	7410001130	S.ARRAY	EXB28V102JX	B
R221	7410001150	S.ARRAY	EXB28V471JX	T
R222	7410001130	S.ARRAY	EXB28V102JX	T
R223	7410001130	S.ARRAY	EXB28V102JX	T
R224	7410001130	S.ARRAY	EXB28V102JX	T
R225	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R227	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R228	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R229	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R230	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R231	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R232	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R233	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R234	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R235	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R236	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R237	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R238	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R239	7410001130	S.ARRAY	EXB28V102JX	B
R240	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R241	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R242	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R243	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R245	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	B

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R246	7410001140	S.ARRAY	EXB28V104JX	B
R247	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R250	7410001140	S.ARRAY	EXB28V104JX	B
R251	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R256	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	T
R257	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R258	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)	T
R259	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R260	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R261	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R262	7030001210	S.RESISTOR	MCR50JZHJ 470 Ω (471)	B
R263	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R264	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R265	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	B
R266	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R268	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R269	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R275	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R276	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R277	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R278	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R279	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R280	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R281	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R282	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)	B
R283	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R284	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	B
R285	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	T
R289	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R290	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R291	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R292	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R293	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	T
R294	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	T
R295	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)	T
R297	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R300	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R304	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	B
R305	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R306	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R307	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	T
R312	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R313	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R314	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R315	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R316	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R317	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R318	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R320	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R321	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R322	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	B
R323	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R325	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R326	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R327	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R328	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R329	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R330	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R331	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R332	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	B
R334	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R335	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R336	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R337	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R338	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R339	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R340	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R341	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	T
R342	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	T
R345	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R346	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R347	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R348	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R349	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R350	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R351	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R352	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R353	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R355	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R356	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	B
R358	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R359	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R367	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R368	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R369	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R370	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R371	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R372	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R373	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R375	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R376	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	B
R382	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R385	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R386	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R387	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R389	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R390	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R391	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R392	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R396	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R397	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R398	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R399	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R403	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R404	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R405	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R407	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R408	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R409	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R411	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R412	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R414	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R415	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	T
R417	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R435	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R436	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R438	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R441	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R442	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R443	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R450	7030000330	S.RESISTOR	MCR10EZHJ 390 Ω (391)	B
R451	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R452	7030004040	S.RESISTOR	ERJ3GEYJ 4R7 V (4.7 Ω)	B
R453	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R457	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R460	7030000330	S.RESISTOR	MCR10EZHJ 390 Ω (391)	B
R461	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R462	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R463	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	T
R464	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R466	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R469	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R470	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R471	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R472	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R473	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R474	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R475	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)	T
R476	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R477	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R478	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R479	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ) [FR3100]	B
	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ) [FR3000]	B
R480	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R481	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ) [FR3000]	B
	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ) [FR3100]	B
R486	7030001230	S.RESISTOR	MCR50JZHJ 680 Ω (681)	T
R487	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R488	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R489	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R492	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)	T
R493	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R494	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R495	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R496	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R497	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R498	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R500	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R501	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R503	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R504	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R505	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R506	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R508	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R509	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R510	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R511	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R512	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R519	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	T
R520	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R521	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R522	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R523	7030006480	S.RESISTOR	MCR100JZHJ 10 Ω (100)	B
R524	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R525	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R526	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R527	7030007180	S.RESISTOR	ERJ12YJ150U (15 Ω) [FR3100]	T
R528	7030010340	S.RESISTOR	ERJ12YJ103U (10 kΩ) [FR3100]	B
R529	7030008020	S.RESISTOR	ERJ12YJ472U (4.7 kΩ)	B
R530	7030006070	S.RESISTOR	ERJ12YJ101U (100 Ω) [FR3100]	T
R531	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω) [FR3000]	T
	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ) [FR3100]	T
C1	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C2	4030006870	S.CERAMIC	C1608 JB 1H 222K-T	T
C3	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C4	4550006480	S.TANTALUM	TEESVA 1C 475M8L	T
C5	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C6	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C7	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C8	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C9	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C10	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C11	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C12	4030017800	S.CERAMIC	C1608 CH 1H 561J-T	T
C13	4030007120	S.CERAMIC	C1608 CH 1H 820J-T	T
C14	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C15	4030017870	S.CERAMIC	C1608 CH 1H 681J-T	T
C16	4030007110	S.CERAMIC	C1608 CH 1H 680J-T	T
C17	4030017870	S.CERAMIC	C1608 CH 1H 681J-T	T
C18	4030007140	S.CERAMIC	C1608 CH 1H 121J-T	T
C20	4030010760	S.CERAMIC	C1608 CH 1H 331J-T	T
C23	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C24	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C25	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C26	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C27	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C28	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C30	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C31	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C32	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C33	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C34	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C36	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C37	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C38	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C39	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C40	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C42	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C43	4030006870	S.CERAMIC	C1608 JB 1H 222K-T	B
C44	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	T
C45	4030017800	S.CERAMIC	C1608 CH 1H 561J-T	T
C46	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C47	4030009490	S.CERAMIC	C1608 JB 1H 821K-T	T
C48	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C49	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C50	4030007150	S.CERAMIC	C1608 CH 1H 151J-T	T
C51	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C52	4030007150	S.CERAMIC	C1608 CH 1H 151J-T	T
C53	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C54	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C56	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C58	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C59	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C60	4030008860	S.CERAMIC	C1608 JB 1H 153K-T	B
C61	4030008860	S.CERAMIC	C1608 JB 1H 153K-T	B
C62	4030006880	S.CERAMIC	C1608 JB 1H 472K-T	B
C63	4030010770	S.CERAMIC	C1608 JB 1H 392K-T	B
C64	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C66	4030008850	S.CERAMIC	C1608 JB 1H 123K-T	B
C67	4030010760	S.CERAMIC	C1608 CH 1H 331J-T	B
C68	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C70	4030009980	S.CERAMIC	C1608 JB 1H 152K-T	B
C71	4030008900	S.CERAMIC	C1608 JB 1H 333K-T	B
C72	4030007100	S.CERAMIC	C1608 CH 1H 560J-T	B
C74	4550006480	S.TANTALUM	TEESVA 1C 475M8L	B
C76	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C77	4030009490	S.CERAMIC	C1608 JB 1H 821K-T	T
C78	4030007150	S.CERAMIC	C1608 CH 1H 151J-T	T
C80	4030008920	S.CERAMIC	C1608 JB 1H 473K-T	T
C83	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C84	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C85	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C87	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C88	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C89	4030008870	S.CERAMIC	C1608 JB 1H 183K-T	T
C90	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C91	4030009490	S.CERAMIC	C1608 JB 1H 821K-T	T
C92	4030008650	S.CERAMIC	C1608 JB 1H 332K-T	B
C93	4030012610	S.CERAMIC	C2012 JB 1C 474K-T	B
C94	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C95	4510004510	ELECTROLYTIC	25 MV 470 HC	T
C96	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C97	4510004510	ELECTROLYTIC	25 MV 470 HC	T
C98	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C99	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C100	4510007040	ELECTROLYTIC	50 MV 10 HWN	T
C103	4030017200	S.CERAMIC	GRM31BR32J102KY01L	B
C106	4030008900	S.CERAMIC	C1608 JB 1H 333K-T	T
C107	4510005310	S.ELECTROLYTIC	ECEV1CA220SR	T
C108	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C109	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C110	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C111	4510005280	ELECTROLYTIC	6.3 MV 220 HC	T
C112	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C113	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C114	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C115	4550003250	S.TANTALUM	TEESVA 1V 474M8L	T
C116	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C117	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C118	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C123	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C124	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C125	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C126	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C127	4030008880	S.CERAMIC	C1608 JB 1H 223K-T	T
C128	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C129	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C130	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C131	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C132	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C133	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C134	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C135	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C136	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C137	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C138	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C139	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	T
C140	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C141	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C142	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C143	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C144	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C145	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C146	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C147	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C148	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C149	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C150	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C151	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C152	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C153	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C154	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C155	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C156	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C157	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C158	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C159	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C160	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C161	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C162	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C163	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C164	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C165	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C166	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C167	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C168	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C169	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C170	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C171	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C172	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C173	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C174	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C176	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C177	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C178	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C179	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C180	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C181	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C182	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C184	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C185	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C186	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C187	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C188	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C189	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C190	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C191	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C192	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C193	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C194	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C195	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C197	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C198	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C199	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C200	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C201	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C202	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C203	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C204	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C205	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C206	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C207	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C208	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C209	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C210	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C211	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C212	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C213	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C214	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C215	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C216	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C217	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C218	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C219	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C220	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C221	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C223	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C224	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C225	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C226	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C227	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C228	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C229	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C230	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C231	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C232	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C233	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C234	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C235	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C236	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C237	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C238	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C239	4510004510	ELECTROLYTIC	25 MV 470 HC	T
C240	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C241	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C242	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	B
C244	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C247	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C248	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C249	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C250	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C251	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C252	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C253	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C254	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C255	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C260	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C261	4550002960	S.TANTALUM	TEESVA 1C 155M8L	B
C262	4030007070	S.CERAMIC	C1608 CH 1H 330J-T	B
C263	4030007070	S.CERAMIC	C1608 CH 1H 330J-T	B
C264	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C265	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C266	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C270	4030008880	S.CERAMIC	C1608 JB 1H 223K-T	T
C271	4030008920	S.CERAMIC	C1608 JB 1H 473K-T	T
C272	4030010020	S.CERAMIC	C1608 JB 1H 122K-T	T
C273	4030009980	S.CERAMIC	C1608 JB 1H 152K-T	T
C274	4030008900	S.CERAMIC	C1608 JB 1H 333K-T	T
C275	4030008900	S.CERAMIC	C1608 JB 1H 333K-T	T
C276	4030010020	S.CERAMIC	C1608 JB 1H 122K-T	T
C277	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C282	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C283	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C287	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C288	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C289	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C290	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C292	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C294	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C295	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C296	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C297	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C301	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C302	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C303	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C307	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C308	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C310	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C311	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C312	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C313	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C316	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C322	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C323	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C325	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C326	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C328	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C329	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C330	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C332	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C335	4550006480	S.TANTALUM TEESVA 1C 475M8L	B
C337	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C339	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C340	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C341	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C342	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C343	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C345	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C346	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C347	4550000530	S.TANTALUM TEESVA 1V 104M8L	B
C361	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C362	4030007050	S.CERAMIC C1608 CH 1H 220J-T	T
C363	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C364	4030007050	S.CERAMIC C1608 CH 1H 220J-T	T
C366	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C371	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C372	4030007110	S.CERAMIC C1608 CH 1H 680J-T	B
C373	4030008870	S.CERAMIC C1608 JB 1H 183K-T	B
C375	4310000900	MYLAR 250 MMW 105K-EF	T
C380	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C382	4030007050	S.CERAMIC C1608 CH 1H 220J-T	T
C383	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C384	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C386	4550006480	S.TANTALUM TEESVA 1C 475M8L	B
C388	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C389	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C390	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C395	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C396	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C397	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C398	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C399	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C407	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C408	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C409	4030006870	S.CERAMIC C1608 JB 1H 222K-T	T
C411	4030007130	S.CERAMIC C1608 CH 1H 101J-T	T
C412	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C413	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C414	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C415	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C416	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C417	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C418	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C419	4340000060	S.MYLAR ECH-U 1C103JB5	B
C420	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C421	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C422	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C423	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C424	4030007050	S.CERAMIC C1608 CH 1H 220J-T	T
C425	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C426	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C427	4030007170	S.CERAMIC C1608 CH 1H 221J-T	B
C428	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C429	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C430	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C431	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C432	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C433	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C434	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C435	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C436	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C437	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C438	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C439	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C440	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C441	4030018060	S.CERAMIC C5750 JB 2E 474KT	T
C442	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C443	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C447	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C448	4550002980	S.TANTALUM TEESVA 1C 225M8L	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C449	4550000460	S.TANTALUM TEESVA 1C 105M8L	B
C450	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C451	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C452	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C453	4510005360	S.ELECTROLYTIC ECEV1HA4R7SR [FR3100]	T
C454	4030008650	S.CERAMIC C1608 JB 1H 332K-T [FR3100]	B
C455	4030007130	S.CERAMIC C1608 CH 1H 101J-T	B
C456	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C457	4030011810	S.CERAMIC C1608 JB 1A 224K-T [FR3100]	T
RL1	6330001640	RELAY ATX209	T
RL2	6330001640	RELAY ATX209	T
J1	6510022590	S.CONNECTOR 22FMN-BMTTR-A-TBT	B
J2	6510022590	S.CONNECTOR 22FMN-BMTTR-A-TBT	B
J3	6510022580	S.CONNECTOR 24FMN-BMTTR-A-TBT	B
J4	6510022620	S.CONNECTOR 10FMN-BMTTR-A-TBT	B
J5	6510018970	S.CONNECTOR B4B-PH-SM3-TB	B
J6	6510022620	S.CONNECTOR 10FMN-BMTTR-A-TBT	B
J7	6510018430	S.CONNECTOR AXN330C038P	B
J8	6510018430	S.CONNECTOR AXN330C038P	B
J9	6510020050	S.CONNECTOR B11B-PH-SM3-TB	T
J10	6510018940	S.CONNECTOR B13B-PH-SM3-TB	T
J11	6510018940	S.CONNECTOR B13B-PH-SM3-TB	T
J12	6510021440	S.CONNECTOR B6B-ZR-SM3-TF	B
J13	6510022190	S.CONNECTOR B3B-PH-SM3-TB	T
J14	6510022190	S.CONNECTOR B3B-PH-SM3-TB	T
J15	6510018960	S.CONNECTOR B2B-PH-SM3-TB	T
J16	6510018960	S.CONNECTOR B2B-PH-SM3-TB	T
F1	5210000030	FUSE FGB 1A (FGB0 125V)	T
F2	5220000020	HOLDER S-N5051	T
F3	5220000020	HOLDER S-N5051	T
T1	5920000570	TRANSFORMER 12T01	T
T2	5920000570	TRANSFORMER 12T01	T
T5	5920000860	TRANSFORMER PLA10AS1030R7R2	T
T6	5910000970	TRANSFORMER ATS-007 [Other]	T
	5920000570	TRANSFORMER 12T01 [USA2]	T
T7	5910000970	TRANSFORMER ATS-007 [Other]	T
	5920000570	TRANSFORMER 12T01 [USA2]	T
T8	5910000970	TRANSFORMER ATS-007 [Other]	T
	5920000570	TRANSFORMER 12T01 [USA2]	T
W1	7030003860	S.RESISTOR ERJ3GE JPW V	B
W2	7030003860	S.RESISTOR ERJ3GE JPW V	B
W3	8900008940	CABLE OPC-886 (P=1 N=10 L=75)	T
W4	8900009230	CABLE OPC-908 (P=1 N=10 L=60)	B
W5	8900008740	CABLE OPC-867 (P=1 N=24 L=60)	B
W7	7030003860	S.RESISTOR ERJ3GE JPW V	T
W8	7030007150	S.RESISTOR MCR50JZHJ JPW (000) [FR3000]	T
W10	8900009270	CABLE OPC-912 (P=1 N=22 L=70)	B
W11	8900009270	CABLE OPC-912 (P=1 N=22 L=70)	B
W12	7030003860	S.RESISTOR ERJ3GE JPW V	B
W13	7030003860	S.RESISTOR ERJ3GE JPW V	T
W14	7030003860	S.RESISTOR ERJ3GE JPW V	T
W15	7030003860	S.RESISTOR ERJ3GE JPW V	T
W16	7030003860	S.RESISTOR ERJ3GE JPW V	T
W17	7030003860	S.RESISTOR ERJ3GE JPW V	B
W18	7030003860	S.RESISTOR ERJ3GE JPW V	B
W19	7030003860	S.RESISTOR ERJ3GE JPW V	B
W20	7030003860	S.RESISTOR ERJ3GE JPW V	T
W21	7030003860	S.RESISTOR ERJ3GE JPW V	T
EP1	0910056271	PCB B 6002A	
EP2	6910014900	BEAD FRC-50-12-6.5	B
EP3	6910014890	E.OTHER FRC-WC1	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1190000450	S.IC	GN2011-Q (TX)	T
IC2	1110003490	S.IC	TA31136FN (D,EL)	T
IC3	1180000420	S.IC	TA78L05F (TE12R)	T
IC4	1140002131	S.IC	MB1511PFV-G-BND-ER	B
IC5	1110002750	S.IC	TA75S01F (TE85R)	B
IC6	1180000420	S.IC	TA78L05F (TE12R)	B
IC7	1180000430	S.IC	TA78L06F (TE12L)	T
IC8	1110003780	S.IC	NJM2902V-TE1	T
Q1	1530003820	S.TRANSISTOR	2SC5337QS-T1	T
Q3	1560000670	S.FET	2SK1771 (TE85R)	T
Q6	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)	B
Q7	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)	B
Q8	1530002920	S.TRANSISTOR	2SC4226-T1 R25	B
Q9	1530003270	S.TRANSISTOR	2SC4703-T2 SF	B
Q14	1530002920	S.TRANSISTOR	2SC4226-T1 R25	B
Q15	1520000270	S.TRANSISTOR	2SB1182 TL Q	B
Q16	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q18	1560000540	S.FET	2SK880-Y (TE85R)	B
Q19	1590000440	S.TRANSISTOR	DTA143ZUA T106	T
Q20	1510000510	S.TRANSISTOR	2SA1576A T106R	T
Q21	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q22	1530002840	S.TRANSISTOR	2SC4116-Y (TE85R)	B
Q23	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q24	1530002050	S.TRANSISTOR	2SC3661-TB	B
D3	1720000700	S.VARICAP	1SV305 (TPL3)	T
D4	1720000700	S.VARICAP	1SV305 (TPL3)	T
D15	1750000140	S.DIODE	1SS268 (TE85R)	B
D16	1750000140	S.DIODE	1SS268 (TE85R)	B
D17	1750000070	S.DIODE	1SS226 (TE85R)	T
D18	1790001250	S.DIODE	MA2S111-(TX)	B
FI1	2030000260	S.MONOLITH	FL-361 (31.65 MHz)	T
FI5	2020001030	CERAMIC	CFWLA455KGFA-B0 (CFWS455G)	T
FI6	2020001010	CERAMIC	CFWLA455KFFA-B0 (CFWS455F) [FRG2]	T
	2020001040	CERAMIC	CFWLA455KEFA-B0 (CFWS455E) [Other]	T
X1	6070000150	S.DISCRIMINATOR	CDBCB455KCAY24-R0	T
X2	6050011670	XTAL	CR-757 (31.195 MHz)	T
X3	6050011480	S.XTAL	CR-732 (12.800 MHz)	T
L1	6200007750	S.COIL	LQW2BHN56NJ01L	T
L2	6200010570	S.COIL	C6342A-R11J-A	T
L3	6200010570	S.COIL	C6342A-R11J-A	T
L4	6200010590	S.COIL	C2520C-22NG-A	T
L5	6200010210	S.COIL	C2012C-22NG	T
L6	6200010570	S.COIL	C6342A-R11J-A	T
L7	6200010570	S.COIL	C6342A-R11J-A	T
L8	6200010490	S.COIL	458DB-1011=P3	T
L9	6200010490	S.COIL	458DB-1011=P3	T
L10	6200010490	S.COIL	458DB-1011=P3	T
L11	6200008730	S.COIL	ELJND R10J 0.1U	B
L12	6200010010	S.COIL	C2012C-39NG	B
L13	6200010540	S.COIL	C2012C-47NG	B
L14	6200010440	S.COIL	C2520C-1R2G (1.2U)	T
L15	6200010540	S.COIL	C2012C-47NG	B
L20	6200002930	S.COIL	ELJFC 1R5K-F	T
L21	6200008080	S.COIL	LQW2BHNR22J01L	B
L22	6200008090	S.COIL	LQW2BHN68NJ01L	B
L23	6200007760	S.COIL	LQW2BHN82NJ01L	B
L24	6200008090	S.COIL	LQW2BHN68NJ01L	B
L25	6200007230	S.COIL	LQW2BHN15NJ01L	B
L27	6200007230	S.COIL	LQW2BHN15NJ01L	B
L29	6200007230	S.COIL	LQW2BHN15NJ01L	B
L30	6200008080	S.COIL	LQW2BHNR22J01L	B
L33	6200009970	S.COIL	C2012C-R39G	T
L39	6200008090	S.COIL	LQW2BHN68NJ01L	B
L40	6200006710	S.COIL	MLF1608E 5R6K 5.6U	T
L41	6200009940	S.COIL	BLM21PG221SN1	T
L42	6910011690	S.COIL	ACB1608M-600-T	B
L43	6910011690	S.COIL	ACB1608M-600-T	T
L44	6910011690	S.COIL	ACB1608M-600-T	B
L45	6910011690	S.COIL	ACB1608M-600-T	T
L46	6910011690	S.COIL	ACB1608M-600-T	T
L47	6910011690	S.COIL	ACB1608M-600-T	T
L48	6910011690	S.COIL	ACB1608M-600-T	B
L49	6910011690	S.COIL	ACB1608M-600-T	T
L50	6910011690	S.COIL	ACB1608M-600-T	B
L51	6910011690	S.COIL	ACB1608M-600-T	T
L53	6200007750	S.COIL	LQW2BHN56NJ01L	B

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R1	7030003350	S.RESISTOR	ERJ3GEYJ 181 V (180 Ω) [FR3100]	T
	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ) [FR3000]	T
R2	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R3	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R4	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R5	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R6	7030000180	S.RESISTOR	MCR10EZHJ 22 Ω (220) [FR3100]	T
	7030000220	S.RESISTOR	MCR10EZHJ 47 Ω (470) [FR3000]	T
R7	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)	T
R8	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R9	7030000220	S.RESISTOR	MCR10EZHJ 47 Ω (470)	B
R10	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R11	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R14	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R15	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R17	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R19	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R25	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)	T
R35	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R36	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R37	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R39	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R40	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R41	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R42	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R43	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R44	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R45	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R48	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	T
R49	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R50	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R52	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R53	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R54	7030003780	S.RESISTOR	ERJ3GEYJ 684 V (680 kΩ)	T
R55	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	T
R56	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R57	7510001670	S.THRMISTOR	NTCG16 4BH 103KT	T
R58	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R60	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R61	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R62	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R63	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	B
R64	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R65	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R66	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R67	7030001010	S.RESISTOR	MCR50JZHJ 10 Ω (100)	B
R68	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R69	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R70	7030010280	S.RESISTOR	ERJ3GEYF 221 V (220 Ω)	B
R71	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R72	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R73	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	B
R74	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R75	7030000220	S.RESISTOR	MCR10EZHJ 47 Ω (470)	B
R76	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R77	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R81	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	B
R85	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R87	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R88	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R92	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R93	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	T
R112	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R115	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R116	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R117	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R118	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R119	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)	B
R120	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R121	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R122	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R123	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R126	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R134	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	B
R135	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R136	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R137	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	B
R138	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)	B
R140	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	B
R148	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	B
R149	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R153	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ) [Other]	T
	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ) [FRG2]	T
R155	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R156	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	T
R157	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R158	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R159	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R160	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R166	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	T
R167	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)	
			[FR3000]	T
	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)	
			[FR3100]	T
R168	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R169	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R170	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R171	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R172	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R173	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R174	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	T
R175	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R176	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R177	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R178	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R179	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)	B
R180	7030003770	S.RESISTOR	ERJ3GEYJ 564 V (560 kΩ)	B
R181	7540000250	ABSORBER	SA05C 401N	
R182	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R183	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R184	7030003210	S.RESISTOR	ERJ3GEYJ 120 V (12 Ω)	
			[FR3100]	T
	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	
			[FR3000]	T
R185	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	
			[FR3000]	T
	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	
			[FR3100]	T
R186	7030003210	S.RESISTOR	ERJ3GEYJ 120 V (12 Ω)	
			[FR3100]	T
	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	
			[FR3000]	T
R187	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R189	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	T
R190	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	B
R191	7030003730	S.RESISTOR	ERJ3GEYJ 274 V (270 kΩ)	B
R192	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R193	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R194	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R195	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R196	7030000290	S.RESISTOR	MCR10EZHJ 180 Ω (181)	
			[FR3100]	T
R197	7030000190	S.RESISTOR	MCR10EZHJ 27 Ω (270)	
			[FR3100]	T
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C2	4030007060	S.CERAMIC	C1608 CH 1H 270J-T	T
C3	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C4	4030007060	S.CERAMIC	C1608 CH 1H 270J-T	T
C5	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C6	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C7	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C8	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C9	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C10	4030007020	S.CERAMIC	C1608 CH 1H 120J-T	B
C11	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C12	4030007060	S.CERAMIC	C1608 CH 1H 270J-T	T
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C14	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	B
C15	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C19	4030006850	S.CERAMIC	C1608 JB 1H 471K-T	T
C20	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C21	4030006970	S.CERAMIC	C1608 CH 1H 060D-T	T
C22	4030007040	S.CERAMIC	C1608 CH 1H 180J-T	T
C23	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	T
C24	4030007020	S.CERAMIC	C1608 CH 1H 120J-T	T
C30	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C31	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C32	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C33	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C34	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C35	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C39	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C40	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C41	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C42	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C43	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C44	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C46	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	T
C47	4030006960	S.CERAMIC	C1608 CH 1H 050C-T	T
C48	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C50	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C51	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C52	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C53	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C55	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	T
C56	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C57	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C58	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C59	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C60	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C62	4030007120	S.CERAMIC	C1608 CH 1H 820J-T	T
C64	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C65	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C67	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C68	4550000460	S.TANTALUM	TEESVA 1C 105M8L	B
C69	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C70	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C71	4030007160	S.CERAMIC	C1608 CH 1H 181J-T	T
C72	4030007160	S.CERAMIC	C1608 CH 1H 181J-T	T
C73	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C74	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C75	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C76	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C77	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C78	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C79	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C80	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C81	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C82	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C83	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C84	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C85	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C86	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C87	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C102	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C103	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C104	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C105	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C106	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C108	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C109	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C110	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C112	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	B
C113	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	B
C114	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	B
C115	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C116	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C117	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C118	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C120	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C121	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C122	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C124	4030007070	S.CERAMIC	C1608 CH 1H 330J-T	B
C126	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C131	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C132	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	B
C133	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C134	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C137	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C138	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C140	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C141	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C142	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C143	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C146	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C151	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	B
C152	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C159	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C165	4550000550	S.TANTALUM	TEESVA 1V 224M8L	B
C167	4550002980	S.TANTALUM	TEESVA 1C 225M8L	B
C173	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	T
C174	4550000270	S.TANTALUM	TEESVA 1E 474M8L	T
C175	4550006350	S.TANTALUM	TEESVB2 1A 226M8L	B
C177	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C180	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C181	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C182	4030007100	S.CERAMIC	C1608 CH 1H 560J-T	T
C183	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C184	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	B
C186	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C187	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C188	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C193	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C194	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C195	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C196	4550000530	S.TANTALUM	TEESVA 1V 104M8L	B
C198	4030008880	S.CERAMIC	C1608 JB 1H 223K-T	B
C199	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C200	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C201	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C202	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C203	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C204	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C205	4030006940	S.CERAMIC	C1608 CH 1H 030C-T	T
C206	4030006940	S.CERAMIC	C1608 CH 1H 030C-T	T
C207	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	T
C208	4030007040	S.CERAMIC	C1608 CH 1H 180J-T	T
C210	4030006850	S.CERAMIC	C1608 JB 1H 471K-T	T
C211	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C212	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C213	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C214	4030006980	S.CERAMIC	C1608 CH 1H 070D-T	T
C215	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C216	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C217	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C218	4030007020	S.CERAMIC	C1608 CH 1H 120J-T	T
C219	4030006950	S.CERAMIC	C1608 CH 1H 040C-T	T
C220	4030007060	S.CERAMIC	C1608 CH 1H 270J-T	T
C221	4030007060	S.CERAMIC	C1608 CH 1H 270J-T	T
C223	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	T
C224	4030007030	S.CERAMIC	C1608 CH 1H 150J-T	B
C225	4030006850	S.CERAMIC	C1608 JB 1H 471K-T	B
C226	4550003210	S.TANTALUM	TEESVD21D226M12R	B
J1	6510013360	CONNECTOR	FL-R-PC (2)	T
J2	6510022590	S.CONNECTOR	22FMN-BMTTR-A-TBT	T
J5	6510013360	CONNECTOR	FL-R-PC (2)	T
W1	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W2	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W3	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W4	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W6	7030003860	S.RESISTOR	ERJ3GE JPW V	B
W7	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W8	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W9	7030008240	S.RESISTOR	ERJ12YJ0R00U	T
W12	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W13	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W14	7030008240	S.RESISTOR	ERJ12YJ0R00U	T
W15	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W18	7030003860	S.RESISTOR	ERJ3GE JPW V	B
W19	7030000010	S.RESISTOR	MCR10EZHJ JPW (000) [FR3000]	T
EP1	0910056303	PCB	B 5926C	

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[RVCO UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
Q1	1560000490	S.FET	2SK508 K52 T2B	T
Q2	1530002920	S.TRANSISTOR	2SC4226-T1 R25	T
D1	1720000700	S.VARICAP	1SV305 (TPL3)	T
D2	1720000700	S.VARICAP	1SV305 (TPL3)	T
D3	1720000700	S.VARICAP	1SV305 (TPL3)	T
D4	1720000700	S.VARICAP	1SV305 (TPL3)	T
L1	6200007120	S.COIL	ELJND 1R0J 1U	T
L2	6200007120	S.COIL	ELJND 1R0J 1U	T
L3	6200010600	S.COIL	C6342A-67NG-A	T
L4	6200007120	S.COIL	ELJND 1R0J 1U	T
L6	6200009350	S.COIL	ELJRE R22G-F3	T
R1	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	T
R2	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R3	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R6	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R7	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	T
R13	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C2	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C3	4550006470	S.TANTALUM	TEESVB2 1D 106M8L	T
C5	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C6	4030009510	S.CERAMIC	C1608 CH 1H 010B-T	T
C7	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C8	4030006980	S.CERAMIC	C1608 CH 1H 070D-T	T
C9	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C11	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C17	4610001920	S.TRIMMER	TZC3Z060A110R00	T
C27	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C30	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C32	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
J1	6510022900	CONNECTOR	IMSA9201B-1-06Z198-T	T
EP1	0910056313	PCB	B 5927C	

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[TX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1180000420	S.IC	TA78L05F (TE12R)	B
IC2	1140002131	S.IC	MB1511PFV-G-BND-ER	B
IC3	1110002400	S.IC	NJM2107F-TE1	B
IC4	1180000430	S.IC	TA78L06F (TE12L)	B
IC5	1190001350	S.IC	M62364FP 600D	B
IC6	1110002400	S.IC	NJM2107F-TE1	T
Q1	1530002380	S.TRANSISTOR	2SC4215-Y (TE85R)	T
Q3	1530003260	S.TRANSISTOR	2SC5006-T1	B
Q5	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)	T
Q6	1530002050	S.TRANSISTOR	2SC3661-TB	B
Q7	1510000510	S.TRANSISTOR	2SA1576A T106R	B
Q9	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)	B
Q10	1560000540	S.FET	2SK880-Y (TE85R)	T
Q11	1510000510	S.TRANSISTOR	2SA1576A T106R	B
Q12	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
D1	1790001620	S.DIODE	1SV308 (TPL3)	T
D3	1790001620	S.DIODE	1SV308 (TPL3)	T
D4	1790001250	S.DIODE	MA2S111-(TX)	B
X1	6050011690	S.XTAL	CR-759 (12.8 MHz)	T
L2	6200007770	S.COIL	LQW2BHNR10J01L	T
L8	6200004920	S.COIL	MLF1608A 2R2K-T	T
L9	6200004920	S.COIL	MLF1608A 2R2K-T	T
L10	6200010210	S.COIL	C2012C-22NG	B
L11	6200004920	S.COIL	MLF1608A 2R2K-T	B
L14	6200003850	S.COIL	36CS-656LZ-09K=P3	T
L17	6910011690	S.COIL	ACB1608M-600-T	B
L18	6910011690	S.COIL	ACB1608M-600-T	B
L19	6910011690	S.COIL	ACB1608M-600-T	B
L20	6910011690	S.COIL	ACB1608M-600-T	B
L21	6910011690	S.COIL	ACB1608M-600-T	B
L22	6910011690	S.COIL	ACB1608M-600-T	B
L23	6910011690	S.COIL	ACB1608M-600-T	B
L24	6910011690	S.COIL	ACB1608M-600-T	B
L25	6910011690	S.COIL	ACB1608M-600-T	B
L26	6910011690	S.COIL	ACB1608M-600-T	B
L27	6200009940	S.COIL	BLM21PG221SN1	B
L28	6200009940	S.COIL	BLM21PG221SN1	T
L29	6910011690	S.COIL	ACB1608M-600-T	T
L30	6910011690	S.COIL	ACB1608M-600-T	B
L31	6200007740	S.COIL	LQW2BHN47NJ01L	B
R1	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R2	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R3	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	B
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R5	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	T
R6	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R9	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	T
R10	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	T
R11	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	T
R12	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	B
R13	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R14	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)	B
R15	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)	B
R16	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R17	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R18	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R19	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R20	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R21	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R22	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R23	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R24	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R25	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R26	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R27	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R29	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R31	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R32	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	B
R33	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R34	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R35	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R36	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	B
R37	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R38	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R39	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R40	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	T
R41	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R42	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[TX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R43	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	B
R45	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R50	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R51	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R52	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	B
R53	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R54	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R56	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R57	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)	T
R61	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R64	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R66	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R67	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	B
R68	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R69	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R70	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)	B
R71	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R76	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R77	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R78	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)	T
R79	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R80	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R81	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R83	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R84	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R85	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R86	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R87	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R88	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R90	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R91	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R92	7030004040	S.RESISTOR	ERJ3GEYJ 4R7 V (4.7 Ω)	B
R93	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	T
R94	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R95	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R96	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	T
R97	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	T
R98	7030001010	S.RESISTOR	MCR50JZHJ 10 Ω (100)	B
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C2	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C9	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C10	4030006990	S.CERAMIC	C1608 CH 1H 080D-T	T
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C17	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C19	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C20	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	B
C21	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C22	4030007040	S.CERAMIC	C1608 CH 1H 180J-T	B
C24	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C26	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C27	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C28	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C29	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C32	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C33	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C34	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C35	4550000510	S.TANTALUM	TEESVA 1V 473M8L	B
C36	4550006390	S.TANTALUM	TEESVA 1C 335M8L	B
C37	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C38	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C39	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C40	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C41	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C42	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C43	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C44	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C45	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C46	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C47	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C48	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C49	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C50	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C51	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C52	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C53	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C57	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C58	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C60	4550003210	S.TANTALUM	TEESVD21D226M12R	B
C61	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C68	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C69	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C72	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C73	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[TX UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C74	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C75	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C76	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C77	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C78	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C79	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C80	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C82	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C85	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C92	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C93	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C96	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C97	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C98	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C99	4550000460	S.TANTALUM	TEESVA 1C 105M8L	T
C100	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C102	4030007050	S.CERAMIC	C1608 CH 1H 220J-T	B
C103	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C104	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C105	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C106	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	B
C107	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C108	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C109	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C110	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C111	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C112	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C113	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C114	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C115	4510004630	S.ELECTROLYTIC	ECEV1CA100SR	T
C116	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C117	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	B
C118	4030007130	S.CERAMIC	C1608 CH 1H 101J-T	T
C119	4550000460	S.TANTALUM	TEESVA 1C 105M8L	B
C120	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C121	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C122	4550006250	S.TANTALUM	TEESVA 1A 106M8L	T
C123	4550006250	S.TANTALUM	TEESVA 1A 106M8L	B
C124	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
C125	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C126	4030007100	S.CERAMIC	C1608 CH 1H 560J-T	T
J3	6510022590	S.CONNECTOR	22FMN-BMTTR-A-TBT	T
J4	6510022800	S.CONNECTOR	B10B-PH-SM3-TB	T
W3	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W4	7030003860	S.RESISTOR	ERJ3GE JPW V	T
W5	7030003860	S.RESISTOR	ERJ3GE JPW V	B
W14	7030003860	S.RESISTOR	ERJ3GE JPW V	B
W15	7030003860	S.RESISTOR	ERJ3GE JPW V	T
WS1	8970024070		FX2368 1.5D COAXIAL TUBE (1)/TX	T
EP1	0910056323	PCB	B 5928C	

[TVCO UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
Q1	1560000490	S.FET	2SK508 K52 T2B	T
Q2	1530003260	S.TRANSISTOR	2SC5006-T1	T
D1	1720000700	S.VARICAP	1SV305 (TPL3)	T
D2	1720000700	S.VARICAP	1SV305 (TPL3)	T
D3	1720000700	S.VARICAP	1SV305 (TPL3)	T
D4	1720000700	S.VARICAP	1SV305 (TPL3)	T
D5	1720000700	S.VARICAP	1SV305 (TPL3)	T
L1	6200004920	S.COIL	MLF1608A 2R2K-T	T
L2	6200007120	S.COIL	ELJND 1R0J 1U	T
L3	6200010620	S.COIL	C6328A-35NG-A	T
L4	6200007120	S.COIL	ELJND 1R0J 1U	T
L5	6200004920	S.COIL	MLF1608A 2R2K-T	T
L6	6200007120	S.COIL	ELJND 1R0J 1U	T
L7	6200007120	S.COIL	ELJND 1R0J 1U	T
R2	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R5	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)	T
R6	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	T
R7	7030003390	S.RESISTOR	ERJ3GEYJ 391 V (390 Ω)	T
R12	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R13	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	T
R14	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R15	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)	T
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C3	4550006080	S.TANTALUM	TEESVB2 1C 106M8L	T
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C5	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C6	4030008160	S.CERAMIC	C1608 UJ 1H 010C-T	T
C7	4030007080	S.CERAMIC	C1608 CH 1H 390J-T	T
C8	4030006980	S.CERAMIC	C1608 CH 1H 070D-T	T
C9	4030007010	S.CERAMIC	C1608 CH 1H 100D-T	T
C10	4030006930	S.CERAMIC	C1608 CH 1H 020C-T	T
C11	4030007020	S.CERAMIC	C1608 CH 1H 120J-T	T
C12	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C17	4610001590	S.TRIMMER	TZC3R100A110R00	T
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C24	4030006990	S.CERAMIC	C1608 CH 1H 080D-T	T
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
J1	6910008020	CONNECTOR	IPS-1323	T
J2	6910008020	CONNECTOR	IPS-1323	T
J3	6910008020	CONNECTOR	IPS-1323	T
J4	6910008020	CONNECTOR	IPS-1323	T
J5	6910008020	CONNECTOR	IPS-1323	T
J6	6910008020	CONNECTOR	IPS-1323	T
W1	7030003860	S.RESISTOR	ERJ3GE JPW V	T
EP1	0910056333	PCB	B 5929C	

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION			M.
IC1	1110002750	S.IC	TA75S01F (TE85R)		T
IC2	1150002110	IC	S-AV33 (I)	[FR3100]	T
	1150002160	IC	S-AV32 (I2)	[FR3000]	T
IC3	1110002400	S.IC	NJM2107F-TE1		T
IC7	1180000420	S.IC	TA78L05F (TE12R)		T
Q4	1560001160	S.FET	2SK3475 (TE12L)		T
Q7	1590000680	S.TRANSISTOR	DTC114EUA T106		T
Q8	1510000590	S.TRANSISTOR	2SA1362-Y (TE85L)		T
Q9	1590001320	S.TRANSISTOR	DTC143ZUA T106		T
Q10	1590000680	S.TRANSISTOR	DTC114EUA T106		T
D2	1720000360	S.DIODE	HSU88TRF		T
D4	1720000360	S.DIODE	HSU88TRF		T
D6	1730002340	S.ZENER	MA8047-M (TX)		T
D7	1730002340	S.ZENER	MA8047-M (TX)		T
D13	1720000360	S.DIODE	HSU88TRF		T
D14	1720000360	S.DIODE	HSU88TRF		T
D15	1790000720	DIODE	MA29W-B		T
D16	1720000360	S.DIODE	HSU88TRF		T
L6	6110003810	COIL	LA-581		T
L7	6110003800	COIL	LA-580		T
L8	6200003740	S.COIL	36CS-656LZ-07K=P3		T
L10	6110003661	COIL	LA-563A		T
L13	6110003661	COIL	LA-563A		T
L14	6200003960	S.COIL	MLF1608A 1R0K-T		T
L15	6200009790	S.COIL	BLM31PG121SN1		T
L16	6910000670	COIL	BL01RN1A1D2B (BL01RN1-A62)		T
L17	6200009790	S.COIL	BLM31PG121SN1		T
L18	6200009790	S.COIL	BLM31PG121SN1		T
L19	6200008090	S.COIL	LQW2BHN68NJ01L		T
L20	6110003790	COIL	LA-579		T
L21	6110002780	COIL	LA-462		T
R1	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)		T
R2	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)		T
R4	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)		T
R5	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R6	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R7	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R8	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R11	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)		T
R13	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	[FR3100]	T
	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)	[FR3000]	T
R15	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)		T
R16	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)		T
R19	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)		T
R20	7030003310	S.RESISTOR	ERJ3GEYJ 820 V (82 Ω)		T
R21	7030003310	S.RESISTOR	ERJ3GEYJ 820 V (82 Ω)		T
R22	7030000180	S.RESISTOR	MCR10EZHJ 22 Ω (220)		T
R23	7030000180	S.RESISTOR	MCR10EZHJ 22 Ω (220)		T
R25	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)		T
R26	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)		T
R28	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)		T
R29	7030000230	S.RESISTOR	MCR10EZHJ 56 Ω (560)		T
R31	7030000270	S.RESISTOR	MCR10EZHJ 120 Ω (121)		T
R32	7030000270	S.RESISTOR	MCR10EZHJ 120 Ω (121)		T
R33	7030003260	S.RESISTOR	ERJ3GEYJ 330 V (33 Ω)		T
R36	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)		T
R37	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)		T
R38	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)		T
R39	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)		T
R40	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)		T
R41	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)		T
R42	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R43	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)		T
R44	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)		T
R45	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)		T
R47	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)		T
R56	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)		T
R57	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)		T
R58	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)		T
R60	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)		T
R61	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)	[FR3100]	T
R61	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	[FR3000]	T
R62	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)		T
R63	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	[FR3100]	T

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION			M.
R63	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	[FR3000]	T
C1	4030018170	S.CERAMIC	ERF22X 6C2H 4R0C D01L		T
C2	4030018050	S.CERAMIC	ERF22X 6C2H 270J D01L		T
C3	4030018050	S.CERAMIC	ERF22X 6C2H 270J D01L		T
C11	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C12	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C19	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C20	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C21	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C22	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C23	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C24	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C26	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C27	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C28	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C30	4030017200	S.CERAMIC	GRM31BR32J102KY01L		T
C31	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C32	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C34	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C37	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C38	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C39	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C40	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C41	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C42	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C44	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C47	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C48	4030018410	S.CERAMIC	ERF22X 6C2H 2R0C D01L		T
C52	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C53	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C55	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C56	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C57	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C59	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C60	4030007010	S.CERAMIC	C1608 CH 1H 100D-T		T
C61	4510007690	ELECTROLYTIC	LXZ25VB2200		T
C67	4510007960	ELECTROLYTIC	KMY25VB1000		T
C68	4510006850	S.ELECTROLYTIC	ECEV1CA4R7NR (16V 4.7)		T
C69	4510007670	S.ELECTROLYTIC	EEVHB1C100R		T
C70	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	[FR3000]	T
	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	[FR3100]	T
C71	4510007670	S.ELECTROLYTIC	EEVHB1C100R		T
C73	4030018030	S.CERAMIC	ERF22X 6C2H 3R0C D01L		T
C74	4030011340	S.CERAMIC	C1608 CH 1H 471J-T		T
C78	4030007030	S.CERAMIC	C1608 CH 1H 150J-T		T
C79	4030007030	S.CERAMIC	C1608 CH 1H 150J-T		T
C80	4030007130	S.CERAMIC	C1608 CH 1H 101J-T		T
C82	4030008880	S.CERAMIC	C1608 JB 1H 223K-T		T
C83	4030007130	S.CERAMIC	C1608 CH 1H 101J-T		T
C88	4030006850	S.CERAMIC	C1608 JB 1H 471K-T		T
C89	4030006850	S.CERAMIC	C1608 JB 1H 471K-T		T
C90	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C91	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C92	4510007570	S.ELECTROLYTIC	EEVHB1C220UR		T
C95	4510007670	S.ELECTROLYTIC	EEVHB1C100R		T
C96	4510007670	S.ELECTROLYTIC	EEVHB1C100R		T
C97	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C98	4030018460	S.CERAMIC	ERF22X 6C2H 100J D01L		T
C99	4030018410	S.CERAMIC	ERF22X 6C2H 2R0C D01L		T
C100	4030018450	S.CERAMIC	ERF22X 6C2H 8R0D D01L		T
C101	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C102	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C103	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C104	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C105	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
C106	4030006900	S.CERAMIC	C1608 JB 1H 103K-T		T
C107	4030011600	S.CERAMIC	C1608 JB 1E 104K-T		T
C108	4030017490	S.CERAMIC	C1608 JB 1A 105K-T		T
C109	4550003220	S.TANTALUM	TEESVA 1E 105M8L	[FR3100]	T
C110	4030006860	S.CERAMIC	C1608 JB 1H 102K-T		T
	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	[FR3000]	T
C111	4030008920	S.CERAMIC	C1608 JB 1H 473K-T	[FR3100]	T
C112	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	[FR3000]	T
C113	4030006950	S.CERAMIC	C1608 CH 1H 040C-T		
J1	6510022800	S.CONNECTOR	B10B-PH-SM3-TB		T
J2	6510007020	CONNECTOR	TMP-J01X-V6		T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
T2	5910001000	TRANSFORMER	TC-7	T
W3	7030003860	S.RESISTOR	ERJ3GE JPW V	T
EP1	6910014490	TERMINAL	OP-100 M3	T
EP2	6910014490	TERMINAL	OP-100 M3	T
EP3	0910056443	PCB	B 5996C	

[VR UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R1	7210003110	VARIABLE	RK0971110 10KA	T
R2	7210003120	VARIABLE	RK0971110 10KB	T
J1	6510018950	S.CONNECTOR	B7B-PH-SM3-TB	T
EP1	0910056261	PCB	B 5999A	

[JACK1 UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
L1	6200009940	S.COIL	BLM21PG221SN1	T
L2	6200009940	S.COIL	BLM21PG221SN1	T
L3	6200009940	S.COIL	BLM21PG221SN1	T
L4	6200009940	S.COIL	BLM21PG221SN1	T
L5	6200009940	S.COIL	BLM21PG221SN1	T
L6	6200009940	S.COIL	BLM21PG221SN1	T
L7	6200009940	S.COIL	BLM21PG221SN1	T
L8	6200009940	S.COIL	BLM21PG221SN1	T
R1	7540000210	S.ABSORBER	KU15N14-4063	T
R2	7540000210	S.ABSORBER	KU15N14-4063	T
R3	7540000210	S.ABSORBER	KU15N14-4063	T
R4	7540000210	S.ABSORBER	KU15N14-4063	T
R5	7540000210	S.ABSORBER	KU15N14-4063	T
R6	7540000210	S.ABSORBER	KU15N14-4063	T
R7	7540000210	S.ABSORBER	KU15N14-4063	T
R8	7540000210	S.ABSORBER	KU15N14-4063	T
R9	7540000210	S.ABSORBER	KU15N14-4063	T
R10	7540000210	S.ABSORBER	KU15N14-4063	T
C1	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C2	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C3	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C4	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C5	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C6	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C7	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C8	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C9	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C10	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C11	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C12	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C13	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	B
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	B
J1	6450001650	CONNECTOR	HSJ0836-01-500	T
J2	6510016170	CONNECTOR	52018-8835	T
J3	6510022730	S.CONNECTOR	S13B-PH-SM3-TB	T
EP1	0910056281	PCB	B 6000A	

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[JACK2 UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
D1	1750000930	S.DIODE	NNCD8.2C-T1	T
D2	1750000930	S.DIODE	NNCD8.2C-T1	T
D3	1750000930	S.DIODE	NNCD8.2C-T1	T
D4	1750000930	S.DIODE	NNCD8.2C-T1	T
D5	1750000930	S.DIODE	NNCD8.2C-T1	T
D6	1750000930	S.DIODE	NNCD8.2C-T1	T
D11	1750000930	S.DIODE	NNCD8.2C-T1	B
D12	1750000930	S.DIODE	NNCD8.2C-T1	B
D13	1750000930	S.DIODE	NNCD8.2C-T1	B
D14	1750000930	S.DIODE	NNCD8.2C-T1	B
D15	1750000930	S.DIODE	NNCD8.2C-T1	B
D16	1750000930	S.DIODE	NNCD8.2C-T1	B
D17	1750000930	S.DIODE	NNCD8.2C-T1	B
D18	1750000930	S.DIODE	NNCD8.2C-T1	B
D19	1750000930	S.DIODE	NNCD8.2C-T1	B
D20	1750000930	S.DIODE	NNCD8.2C-T1	B
D21	1750000930	S.DIODE	NNCD8.2C-T1	B
D22	1750000930	S.DIODE	NNCD8.2C-T1	B
D23	1750000930	S.DIODE	NNCD8.2C-T1	B
L1	6200009940	S.COIL	BLM21PG221SN1	B
L2	6200009940	S.COIL	BLM21PG221SN1	B
L3	6200009940	S.COIL	BLM21PG221SN1	B
L4	6200009940	S.COIL	BLM21PG221SN1	B
L5	6200009940	S.COIL	BLM21PG221SN1	B
L6	6200009940	S.COIL	BLM21PG221SN1	B
L11	6200009940	S.COIL	BLM21PG221SN1	T
L12	6200009940	S.COIL	BLM21PG221SN1	T
L13	6200009940	S.COIL	BLM21PG221SN1	T
L14	6200009940	S.COIL	BLM21PG221SN1	T
L15	6200009940	S.COIL	BLM21PG221SN1	T
L16	6200009940	S.COIL	BLM21PG221SN1	T
L17	6200009940	S.COIL	BLM21PG221SN1	T
L18	6200009940	S.COIL	BLM21PG221SN1	T
L19	6200009940	S.COIL	BLM21PG221SN1	T
L20	6200009940	S.COIL	BLM21PG221SN1	T
L21	6200009940	S.COIL	BLM21PG221SN1	T
L22	6200009940	S.COIL	BLM21PG221SN1	T
L23	6200009940	S.COIL	BLM21PG221SN1	T
C1	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C2	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C3	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C4	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C5	4030007090	S.CERAMIC	C1608 CH 1H 470J-T	T
C6	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C8	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	T
C11	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C12	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C13	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C14	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C15	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C16	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C17	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C18	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C19	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C20	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C21	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C22	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
C23	4030007170	S.CERAMIC	C1608 CH 1H 221J-T	B
J1	6510023290	CONNECTOR	DBR61-25K1200-B	T
J2	6510022730	S.CONNECTOR	S13B-PH-SM3-TB	T
J3	6510022730	S.CONNECTOR	S13B-PH-SM3-TB	B
EP1	0910056291	PCB	B 6001A	

[FR3000]: IC-FR3000, [FR3100]: IC-FR3100

[CHASSIS UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
J1	6510022970	CONNECTOR	N-PA-JJ (NI)	
SP1	2510001200	SPEAKER	C057FA510-10	
MF1	2710000750	FAN	FBA08A12LZ	
MF2	2710000740	FAN	FBA06A12L [FR3000]	
W1	8900011510	CABLE	OPC-1048 (AC INPUT CABLE)	
W2	8900011521	CABLE	OPC-1049A (POWER SW CABLE)	
W3	8900011531	CABLE	OPC-1050A (BACKUP DC CABLE)	
W4	8900011540	CABLE	OPC-1052 (PS OUTPUT CABLE)	
W5	8900011550	CABLE	OPC-1053 (REG-LOGIC CABLE)	
W6	8900011560	CABLE	OPC-1054 (PA-TX CABLE)	
W7	8900011571	CABLE	OPC-1055A (LOGIC-JACK2 CABLEA)	
W8	8900011580	CABLE	OPC-1056 (LOGIC-JACK2 CABLEB)	
W9	8900011590	CABLE	OPC-1057 (LOGIC-JACK1 CABLE)	
W10	8900011600	CABLE	OPC-1058 (REG-PA CABLE RED)	
W11	8900011610	CABLE	OPC-1059 (REG-PA CABLE BLK)	
W12	8900012150	CABLE	OPC-1247	
W13	8900012270	CABLE	OPC-1255 (2367 TX-ANT CABLE)	
W14	8900012310	CABLE	OPC-1265 (REG-FAN/TUBE)	
W15	8900011660	CABLE	OPC-1178 (PA-FAN CABLE) [FR3000]	
W16	8900011681	CABLE	OPC-1183A (LOGIC-VR CABLE)	
W17	8900011690	CABLE	OPC-1184 (LOGIC-FRONT CABLE)	
WS1	8600036930		SX2368 P01CH	
WS2	8970024130		FX2367 J LEAD SET (1) /CH [FR3100]	
EP1	6910014470	UNIT BOARD	FP2152A [USA2], [GEN2]	
	6910014480	UNIT BOARD	FP2153A [GEN4], [GEN74], [EUR2], [FRG2]	
EP4	6910008330	E.OTHER	G80-18	
EP5	8930030420	COVER	FG60B	

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

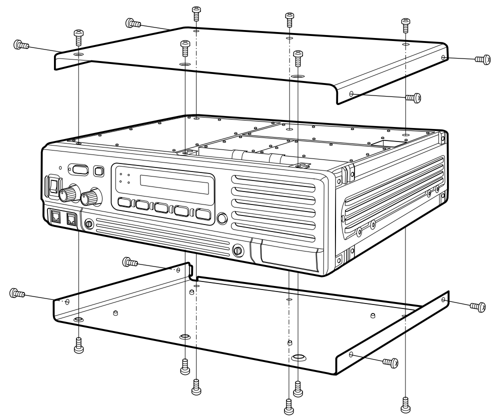
SECTION 6 OPTION UNIT INSTALLATION

6-1 Opening the repeater's case

Follow the case and cover opening procedures shown here when an optional unit is installed or adjust the internal units, etc.

CAUTION: DISCONNECT the AC power cable and/or DC power cable from the repeater. Otherwise, there is danger of electric shock and/or equipment damage.

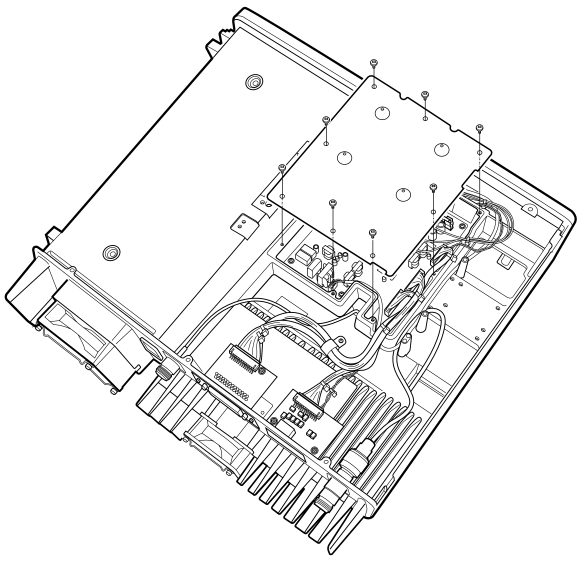
① Remove 6 screws from the top of the repeater and 4 screws from the sides, then lift up the top cover.
② Turn the repeater upside down.
③ Remove 6 screws from the bottom of the repeater, and 4 screws from the sides, then lift up the bottom cover.



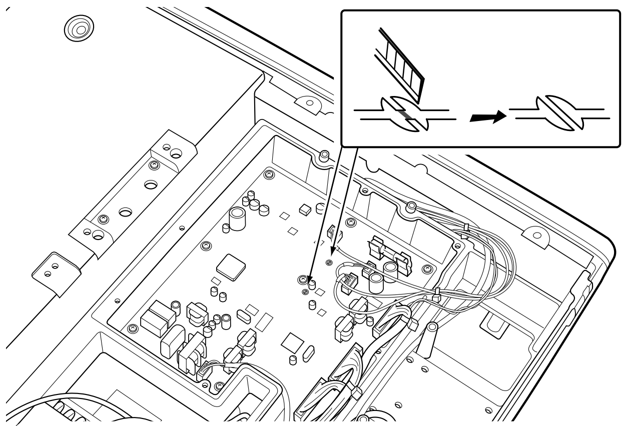
6-2 Voice scrambler unit installation

The UT-109 (#01)/UT-110 (#01) provides high performance private communication for base operating mode. In order to receive or send scrambled transmissions, the UT-109 (#01)/UT-110 (#01) must be installed and to activate the scrambler function.

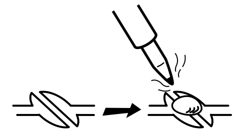
① Remove the top and bottom covers as shown above.
② Remove 8 screws from the LOGIC shielding plate, then remove the plate.



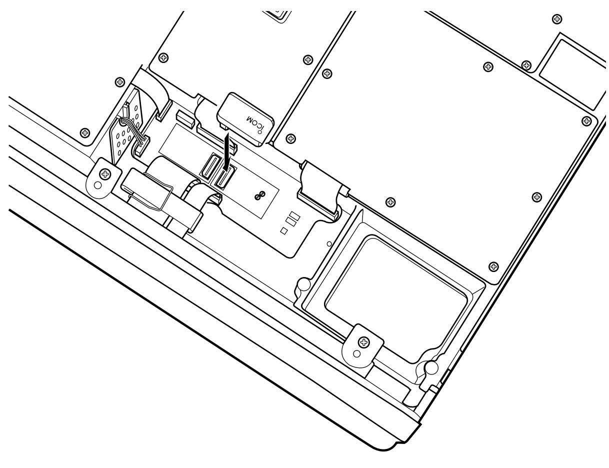
③ Cut the pattern on the PCB at the RX AF circuit (CP1) and TX mic circuit (CP2) on the LOGIC unit as shown at right.



NOTE: Be sure to re-solder above disconnected points, otherwise no TX modulation or AF output is available when you remove the scrambler unit.



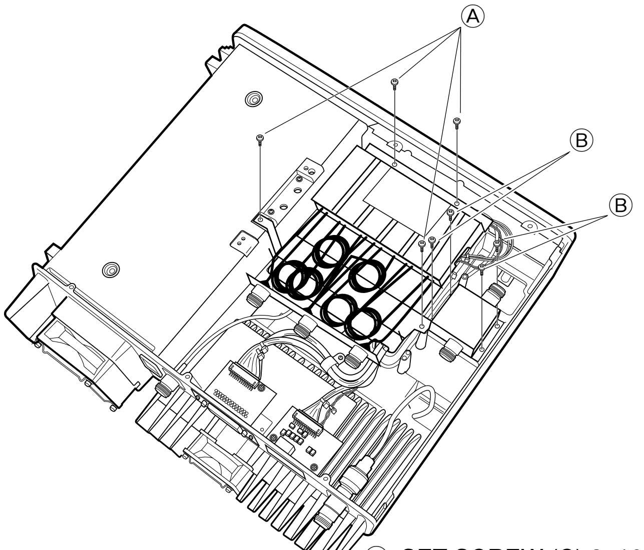
④ Turn the repeater upside down, then install the scrambler unit as shown below.



⑤ Return the LOGIC shielding plate, top and bottom covers to their original positions.

6-3 Duplexer and isolater installation

① Remove the top and bottom covers (See page 6-1).
② Tighten 4 screws, Ⓐ, for installing the duplexer unit.
③ Tighten 4 screws, Ⓑ, for installing the isolater unit.

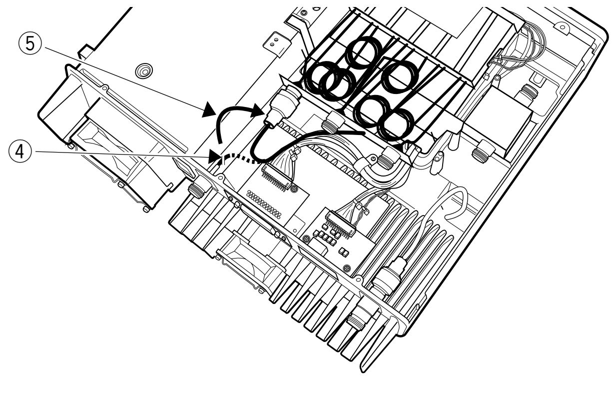


Ⓐ: SET SCREW (C) 3×10

Ⓑ: SET SCREW (H) 3×8

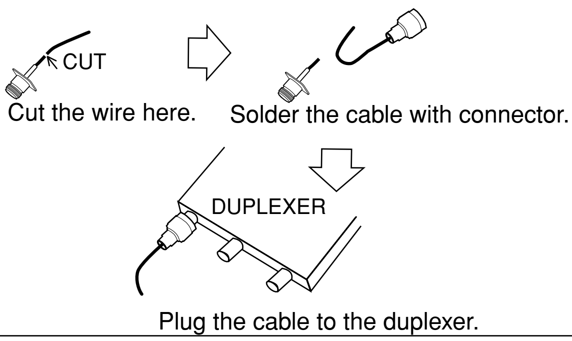
BOTTOM VIEW OF THE REPEATER

④ Cut the RX ANT-RX unit cable and then modify it.
⑤ Connect the modified cable to the duplexer unit (RX frequency connector)

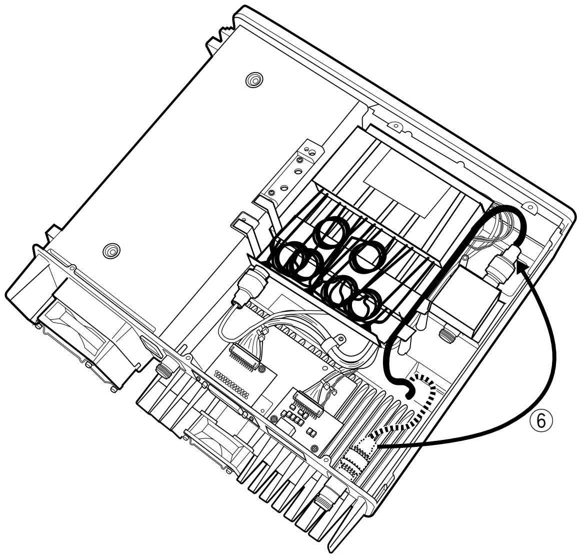


BOTTOM VIEW OF THE REPEATER

RX ANT-RX unit cable modification

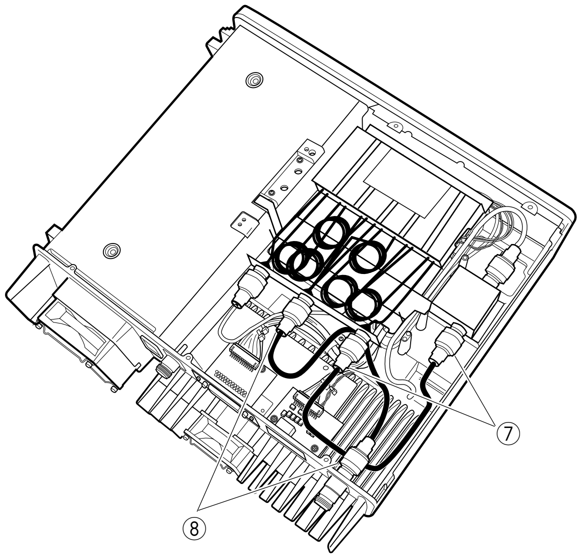


⑥ Unplug the TX ANT–PA unit cable from the TX ANT connecter (CHASSIS), and then plug to the isolater (input connector).



BOTTOM VIEW OF THE REPEATER

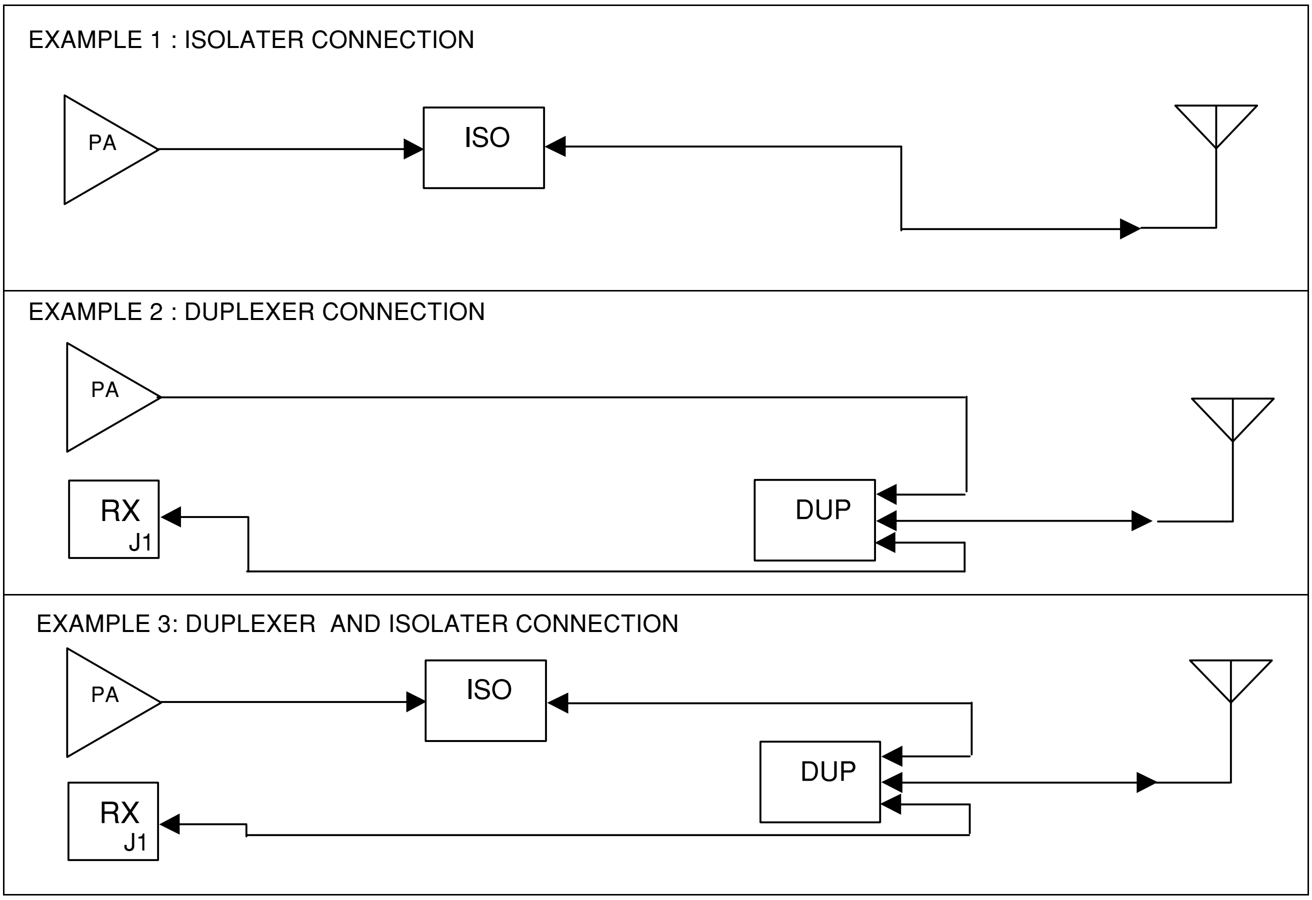
⑦ Connect the *cable between the isolator (output connector) and the duplexer (TX frequency connector).
⑧ Connect the *cable between the duplexer (ANT connector) and the TX ANT connector (CHASSIS).
⑨ Return the top and bottom cover to their original position.



BOTTOM VIEW OF THE REPEATER

NOTE: Connection cable are not supply with the isolater and the duplexer. Therefore, need to make them by yourself.

CONNECTION



ISO: ISOLATER DUP: DUPLEXER

SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

[CHASSIS PARTS]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
W2	8900011521	OPC-1049A (Power SW cable)	1
W7	8900011571	OPC-1055A (LOGIC-JACK2 cable A)	1
W8	8900011580	OPC-1056 (LOGIC-JACK2 cable B)	1
W9	8900011590	OPC-1057 (LOGIC-JACK1 cable)	1
W16	8900011681	OPC-1183A (LOGIC-VR cable)	1
W17	8900011690	OPC-1184 (LOGIC-FRONT cable)	1
WS1	8600036930	SX2368 P01CH	1
WS2	8970024130	FX2367 J lead set (1)/CH [FR3100]	1
MP1	8210018430	2368 front panel assembly	1
MP2	8310052480	2368 Window plate	1
MP3	8930056450	2368 6-key	1
MP4	8930056440	2368 2-key	1
MP5	8210018300	2368 sub panel	1
MP6	8930058000	2368 filter net	1
MP8	8930059660	2368 A-sponge	1
MP9	8930059670	2368 B-sponge	1
MP10	8930059650	2368 front sheet	1
MP11	8860001290	Grip ring NO.3	2
MP12	8820001230	2368 screw	2
MP14	8610009760	Knob N233	1
MP15	8610009760	Knob N233	1
MP16	8010018550	2368 sub chassis	1
MP17	8010018540	2368 chassis	1
MP19	8110007480	2368 L-cover	1
MP20	8930057680	Rubber stand (O)	4
MP25	8110007640	2368 LOGIC shield cover	1
MP26	8930056620	2368 D-sub plate	1
MP27	8930059060	2368 Fin cover Y656	1
MP37	8950003170	Nylon clip SL-8N	1
MP56	8810007230	Set screw H M3 × 8	2
MP57	8810007230	Set screw H M3 × 8	1
MP65	8810008450	Bind screw M4 × 8 ZK	10
MP66	8810005710	Screw PH B0 M2 × 6 ZK	4
MP67	8810005710	Screw PH B0 M2 × 6 ZK	2
MP68	8810009650	Screw FH BT M3 × 8 NI-ZU	6
MP69	8810008660	Screw PH BT M3 × 8 NI-ZU	8
MP77	8810008660	Screw PH BT M3 × 8 NI-ZU	8
MP82	8810008660	Screw PH BT M3 × 8 NI-ZU	4
MP84	8810008660	Screw PH BT M3 × 8 NI-ZU	7
MP85	8810008660	Screw PH BT M3 × 8 NI-ZU	9
MP86	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP87	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP91	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP92	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP101	8930018620	Himelon sheet Y	4
MP102	8930047050	Himelon sheet BU	1
MP106	8930007510	Knob spring NO.7800	1
MP107	8930007510	Knob spring NO.7800	1
MP108	8930003580	Alminum sheet U [FR3100]	1
SP1	2510001200	Speaker C057FA510-10	1

[FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
EP2	6910014560	Spacer LM-15	1
EP3	6910014550	Spacer LM-13	1
EP4	6910014540	Spacer LM-10	1
EP5	6910014540	Spacer LM-10	1
EP6	6910014540	Spacer LM-10	1
EP7	6910014540	Spacer LM-10	1

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
EP2	6910014900	FRC-50-12-6.5	1
EP3	6910014890	FRC-WC1	1
F1	5210000030	Fuse FGB 1A (FGB0 125V)	1
F2	5220000020	Fuse holder S-N5051	1
F3	5220000020	Fuse holder S-N5051	1
W3	8900008940	Cable OPC-886 (P=1 N=10 L=75)	1
W4	8900009230	Cable OPC-908 (P=1 N=10 L=60)	1
W5	8900008740	Cable OPC-867 (P=1 N=24 L=60)	1
W10	8900009270	Cable OPC-912 (P=1 N=22 L=70)	1
W11	8900009270	Cable OPC-912 (P=1 N=22 L=70)	1

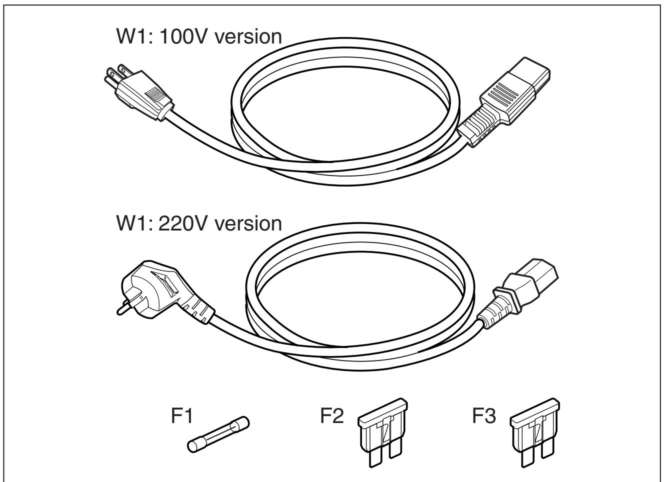
[JACK2 UNIT]

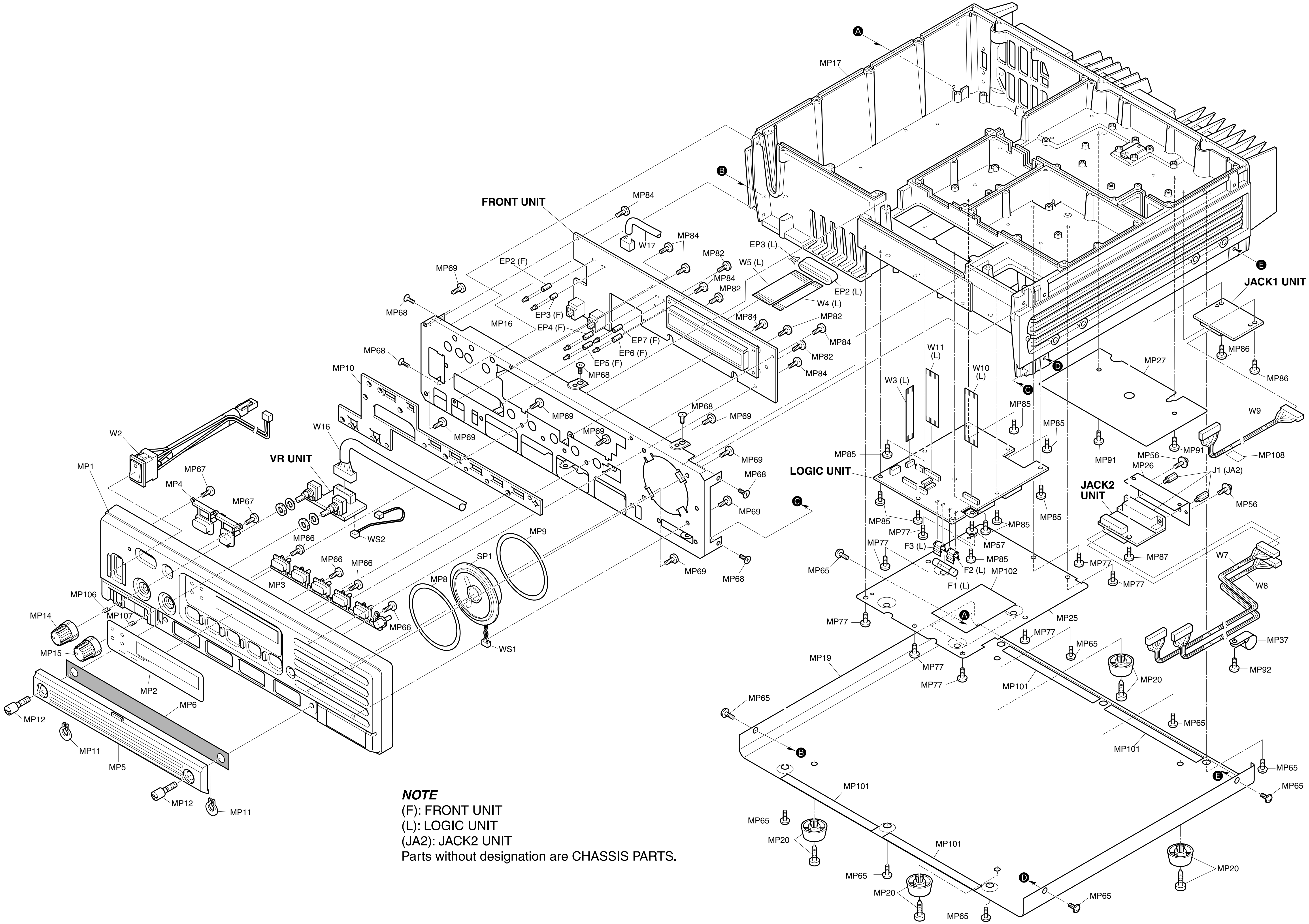
REF NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510023290	Connector DBR61-25K1200-B (Incl. Stand-off)	1

Screw abbreviations
B0, BT: Self-tapping PH: Pan head FH: Flat head
NI-ZU: Nickel-Zinc ZK: Black

[ACCESSORIES]

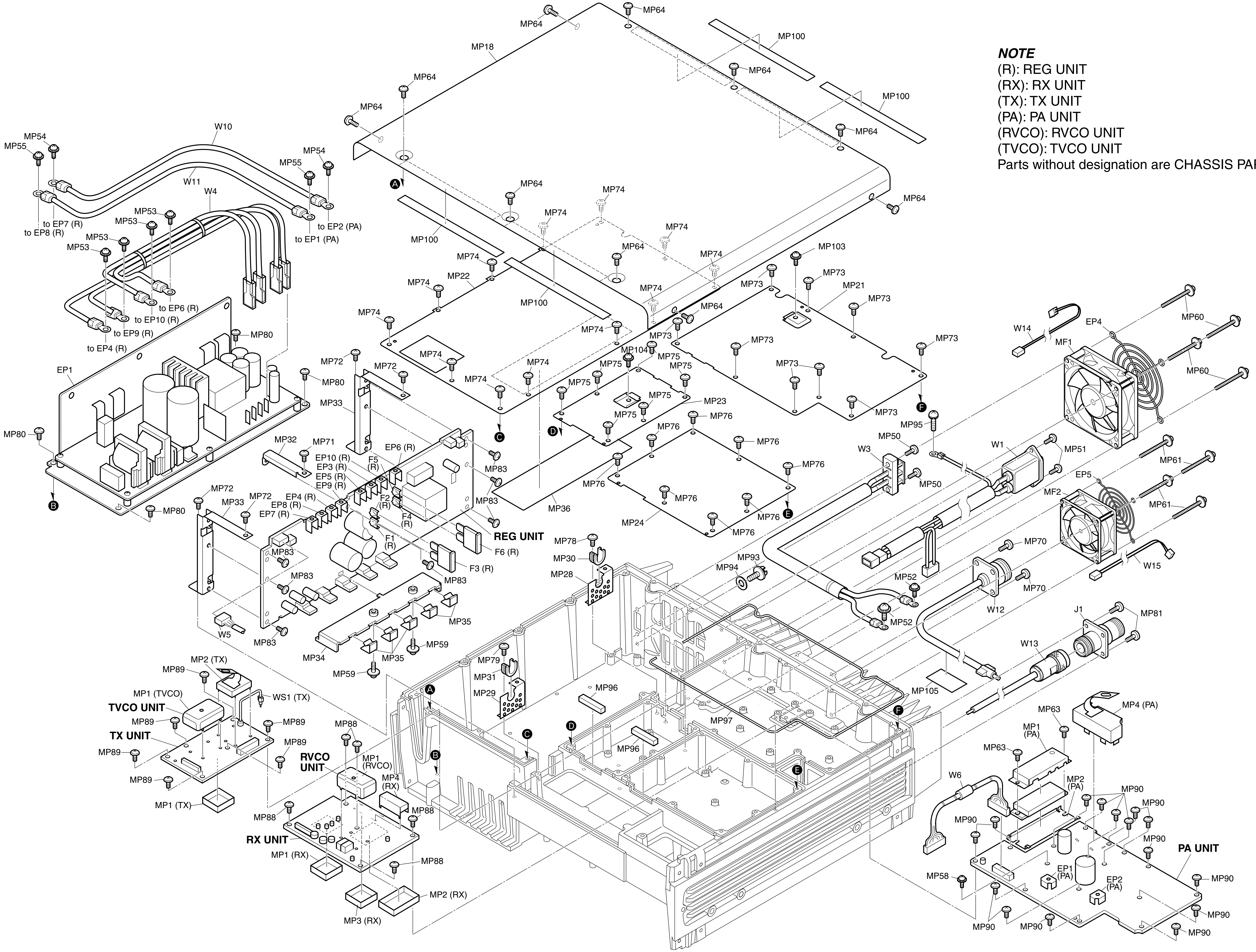
REF NO.	ORDER NO.	DESCRIPTION	QTY.
F1	5210000030	Fuse FGB 1A (FGB0 125V)	1
F2	5210000850	Fuse ATC-20	1
F3	5210000850	Fuse ATC-20	1
W1	8900005130	Cable OPC-492 (220V version)	1
	8900005250	Cable OPC-510 (100V version)	1





NOTE

(F): FRONT UNIT
(L): LOGIC UNIT
(JA2): JACK2 UNIT
Parts without designation are CHASSIS PARTS.



NOTE

(R): REG UNIT
(RX): RX UNIT
(TX): TX UNIT
(PA): PA UNIT
(RVCO): RVCO UNIT
(TVCO): TVCO UNIT
Parts without designation are CHASSIS PARTS.

[CHASSIS PARTS]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510022970	Connector N-PA-JJ(NI)	1
W1	8900011510	OPC-1048 (AC input cable)	1
W3	8900011531	OPC-1050A (Back up DC cable)	1
W4	8900011540	OPC-1052 (PS output cable)	1
W5	8900011550	OPC-1053 (REG-LOGIC cable)	1
W6	8900011560	OPC-1054 (PA-TX cable)	1
W10	8900011600	OPC-1058 (REG-PA cable red)	1
W11	8900011610	OPC-1059 (REG-PA cable black)	1
W12	8900012150	OPC-1247 (RX-ANT cable)	1
W13	8900012270	OPC-1255 (2367 TX-ANT cable)	1
W14	8900012310	OPC-1265 (REF-FAN/tube)	1
W15	8900011660	OPC-1178 (PA-FAN cable) [FR3000]	1
EP1	6910014470	Unit board FP2152A (100V version)	1
	6910014480	Unit board FP2153A (220V version)	1
EP4	6910008330	G80-18 (Fin gured)	1
EP5	8930030420	Cover FG60B	1
MF1	2710000750	Fan FBA08A12LZ	1
MF2	2710000740	Fan FBA06A12L	1
MP18	8110007490	2368 U-cover	1
MP21	8510015490	2367 PA shield cover	1
MP22	8510013770	2368 REG shield cover	1
MP23	8510013790	2368 TX shield cover	1
MP24	8510013780	2368 RX shield cover	1
MP28	8510013810	2368 KC plate Y599	1
MP29	8510013810	2368 KC plate Y599	1
MP30	8010004340	Edging rubber FX452	1
MP31	8010004340	Edging rubber FX452	1
MP32	8930056650	2368 PCB angle Y600	1
MP33	8930056660	2368 REG PCB angle	2
MP34	8410002510	2368 REG heat sink	1
MP35	8930035230	1546 TR-A clip	5
MP36	8930005460	Isolating sheet G	1
MP50	8810000420	Screw PH M4 × 18	2
MP51	8810009030	Screw FH (pan head) M3 × 8 ZK	2
MP52	8810007230	Set screw H M3 × 8	2
MP53	8810007230	Set screw H M3 × 8	4
MP54	8810007230	Set screw H M3 × 8	2
MP55	8810007230	Set screw H M3 × 8	2
MP58	8810007230	Set screw H M3 × 8	1
MP59	8810003380	Set screw C M3 × 10	2
MP60	8810010130	Set screw (C) 3 × 35	4
MP61	8810010130	Set screw (C) 3 × 35 [FR3000]	4
	8810003360	Set screw C 3 × 6 [FR3100]	4
MP62	8810009040	Set screw H M2.6 × 10 NI	2
MP63	8810004830	Screw PH M3 × 10 surface BS	2
MP64	8810008450	Bind screw M4 × 8 ZK	10
MP70	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP71	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP72	8810008660	Screw PH BT M3 × 8 NI-ZU	4
MP73	8810008660	Screw PH BT M3 × 8 NI-ZU	9
MP74	8810008660	Screw PH BT M3 × 8 NI-ZU	12
MP75	8810008660	Screw PH BT M3 × 8 NI-ZU	6
MP76	8810008660	Screw PH BT M3 × 8 NI-ZU	8
MP78	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP79	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP80	8810008660	Screw PH BT M3 × 8 NI-ZU	4
MP81	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP83	8810008660	Screw PH BT M3 × 8 NI-ZU	7
MP88	8810008660	Screw PH BT M3 × 8 NI-ZU	5
MP89	8810008660	Screw PH BT M3 × 8 NI-ZU	6
MP90	8810008660	Screw PH BT M3 × 8 NI-ZU	15
MP93	8820000530	Flange volt M4 × 8 NI	1
MP94	8850000140	Flat washer M4 NI BS	1
MP95	8810003860	Set screw A M4 × 8	1
MP96	8930059330	Shield sponge (W)	2
MP97	8930059340	2368 A-shield line	1
MP100	8930018620	Himelon sheet Y	4
MP103	8810005770	Set screw Bind M3 × 8 Black	1
MP104	8810005770	Set screw Bind M3 × 8 Black	1
MP105	8930005150	Aluminum sheet B	1

[RX UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510015120	2368 A-case	1
MP2	8510015130	2368 B-case	1
MP3	8510015140	2368 E-case	1
MP4	8510015480	2367 shield case	1

[TX UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510015120	2368 A-case	1
MP2	8510015240	2368 TX shield case assembly	1
WS1	8970024070	FX2368 1.5D coaxial cable (1) / TX	1

[RVCO UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510014700	2368 RVCO case	1

[TVCO UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510014690	2368 TVCO case	1

[REG UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
F1	5220000300	Fuse holder 1A5600	1
F2	5220000300	Fuse holder 1A5600	1
F3	5210000850	Fuse ATC-20	1
F4	5220000300	Fuse holder 1A5600	1
F5	5220000300	Fuse holder 1A5600	1
F6	5210000850	Fuse ATC-20	1
EP3	6910011340	Terminal OT-010 M3	1
EP4	6910011340	Terminal OT-010 M3	1
EP5	6910011340	Terminal OT-010 M3	1
EP6	6910011340	Terminal OT-010 M3	1
EP7	6910011340	Terminal OT-010 M3	1
EP8	6910011340	Terminal OT-010 M3	1
EP9	6910011340	Terminal OT-010 M3	1
EP10	6910011340	Terminal OT-010 M3	1

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
EP1	6910014490	Terminal OP-100 M3	1
EP2	6910014490	Terminal OP-100 M3	1
MP1	8930060410	2367 Module holde	1
MP2	8930060420	2367 module plate	1
MP3	8510015550	2367 PA shield case assembly Y677	1

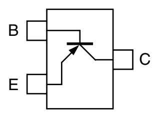
Screw abbreviations

B0, BT: Self-tapping PH: Pan head FH: Flat head
NI-ZU: Nickel-Zinc ZK: Black

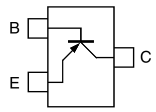
SECTION 8 SEMI-CONDUCTOR INFORMATION

8 - 1 TRANSISTORS AND FETS

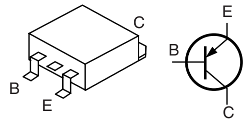
2SA1362-Y
(Symbol: AEY)



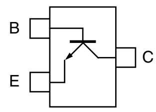
2SA1576A T106R
(Symbol: FR)



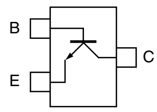
2SB1182 TL Q
(Symbol: B1182, Q)



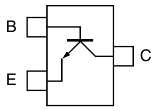
2SC2712-BL
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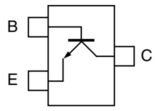
2SC3661-TB
(Symbol: FY)



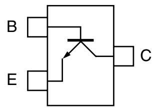
2SC4081 T106 R
(Symbol: BR)



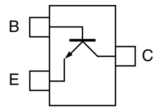
2SC4116-Y
(Symbol: LY)



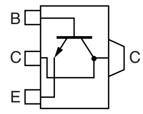
2SC4215-O
(Symbol: QO)



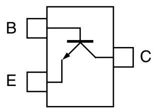
2SC4226-T1 R25
(Symbol: R25)



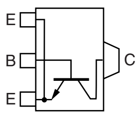
2SC4703-T2 SF
(Symbol: SF)



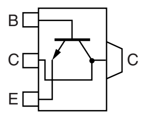
2SC5006-T1
(Symbol: 24)



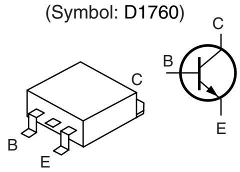
2SC5337QS-T1
(Symbol: QS)



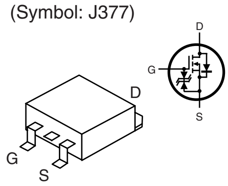
2SD1664 T100Q
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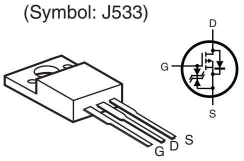
2SD1760 TLQ
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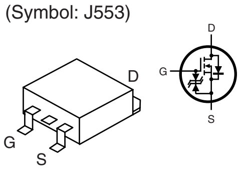
2SJ377 (TE16R)
(Symbol: J377)



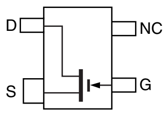
2SJ533
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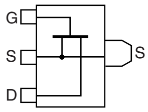
2SJ553STR
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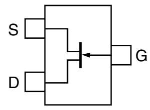
2SK1771 (TE85R)
(Symbol: UB)



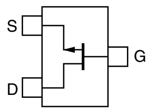
2SK3475 (TE12L)
(Symbol: WB)



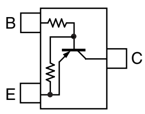
2SK508 K53 T1B
(Symbol: K53)



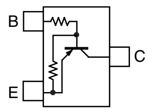
2SK880Y
(Symbol: XY)



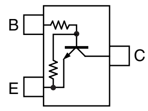
DTA143ZUA T106
(Symbol: 113)



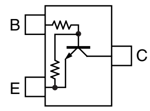
DTA144EE TL
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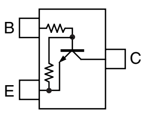
DTC114EUA T106
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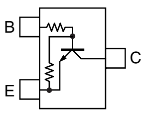
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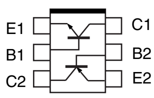
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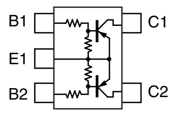
DTC144EUA T106
(Symbol: 26)



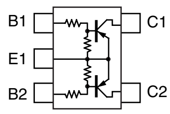
IMZ4 T108
(Symbol: Z4)



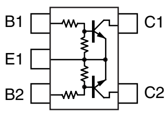
XP1111 (TX)
(Symbol: 9S)



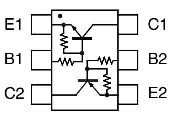
XP1114(TX)
(Symbol: 7Q)



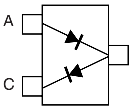
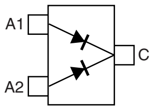
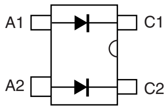
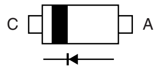
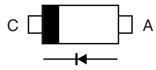
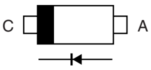
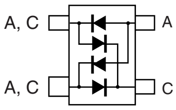
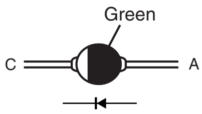
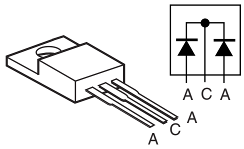
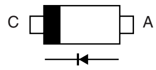
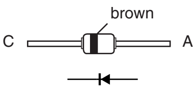
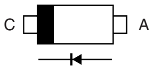
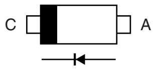
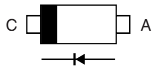
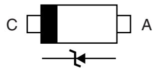
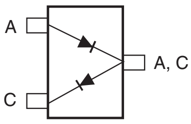
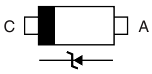
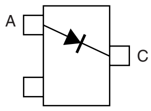
XP1214(TX)
(Symbol: 9H)



XP4311 (TX)
(Symbol: 3X)



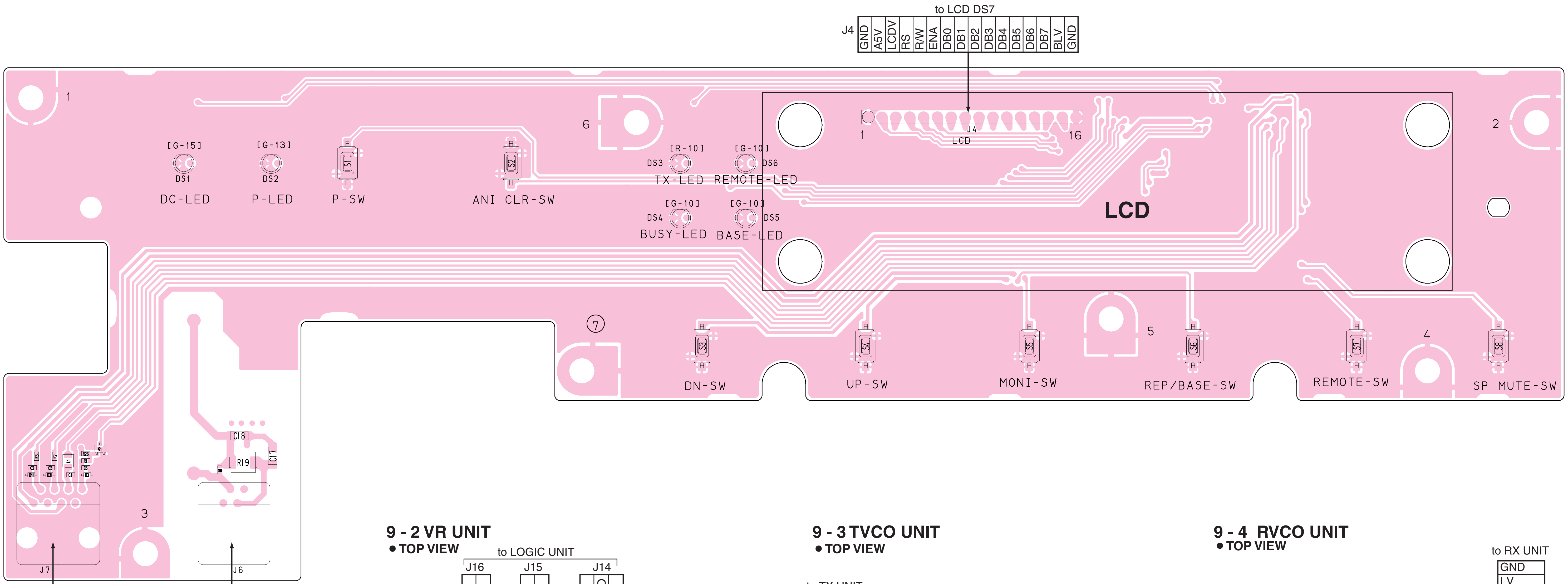
8 - 2 DIODES

1SS226 (TE85R) (Symbol: C3)  	1SS268 (TE85R) (Symbol: BF)  	1SS319 (TE85R) (Symbol: A4)  	1SS355 TE-17 (Symbol: A)  	1SV305 (TPL3) (Symbol: TV) 
1SV308 (TPL3) (Symbol: TX)  	D1UBA80-4062 (Symbol: UA80)  	DSA3A1 (Symbol: None)  	FCH30A03L (Symbol: FCH30A03L)  	HSU88TRF (Symbol: 9) 
MA29W-B (Symbol: Blown line)  	MA2S077-(TX) (Symbol: S)  	MA2S111-(TX) (Symbol: A)  	MA8047-M(TX) (Symbol: 4-7)  	NNCD8.2C-T1 (Symbol: None) 
PTZ TE25 13B (Symbol: 13B)  	PTZ TE25 36B (Symbol: 36, B)  	SB07-03C-TB (Symbol: J)  		

The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

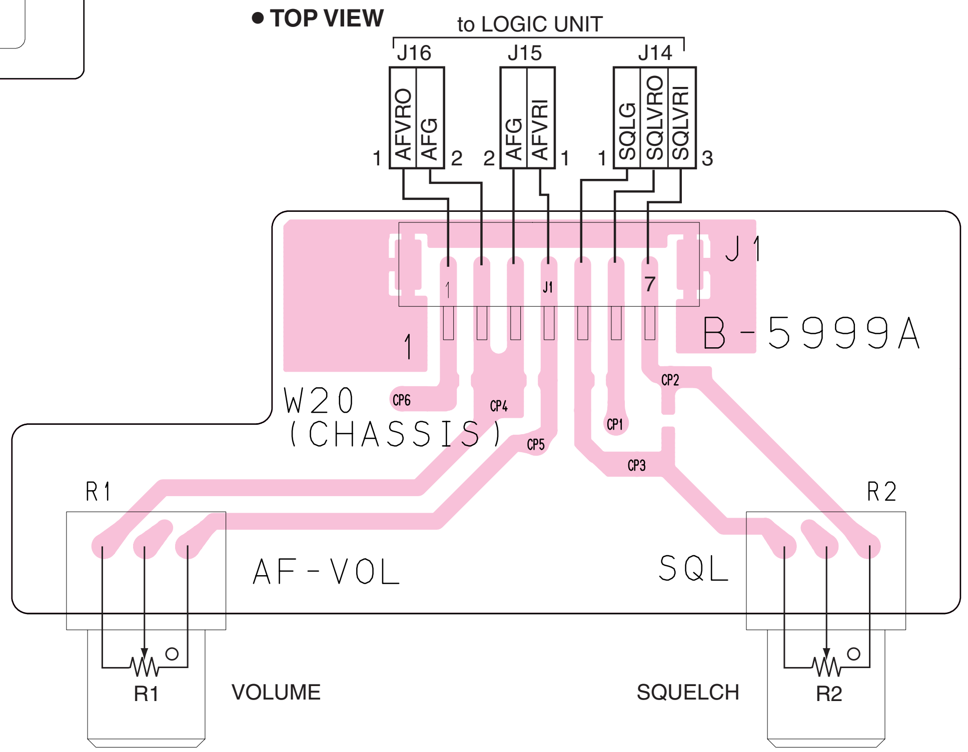
9 - 1 FRONT UNIT

• TOP VIEW



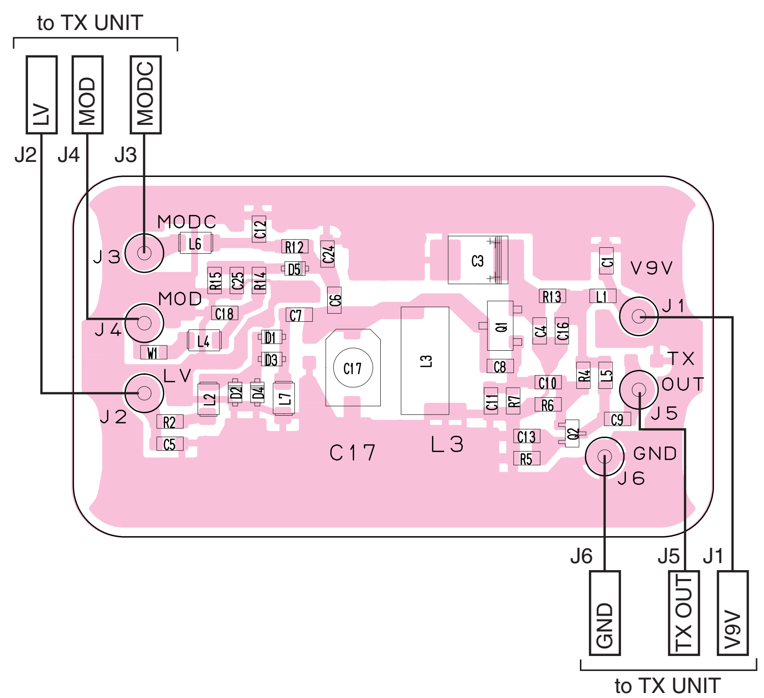
9 - 2 VR UNIT

• TOP VIEW



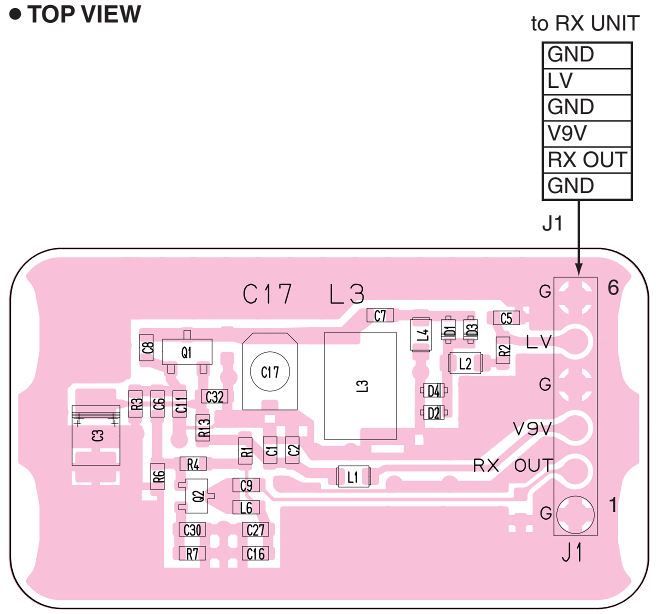
9 - 3 TVCO UNIT

• TOP VIEW



9 - 4 RVCO UNIT

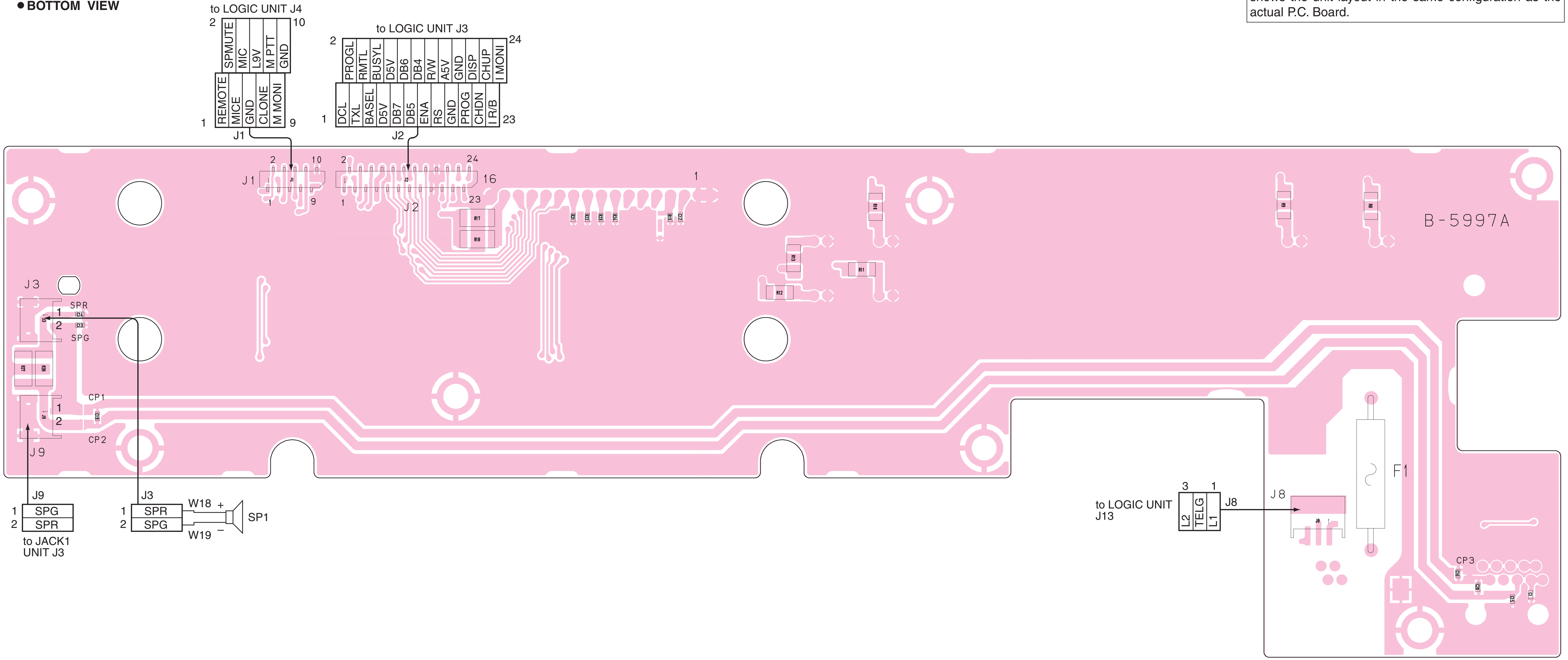
• TOP VIEW



The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

FRONT UNIT

● BOTTOM VIEW



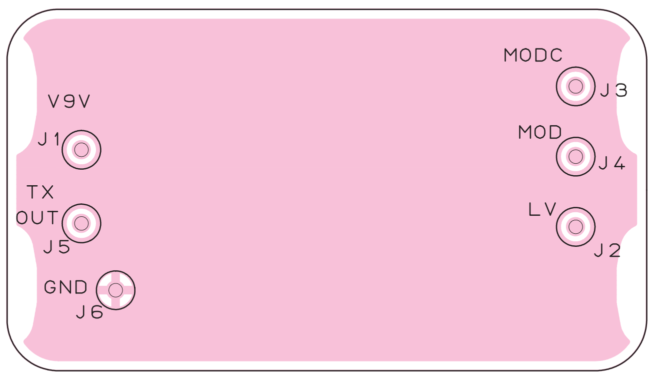
RVCO UNIT

● BOTTOM VIEW



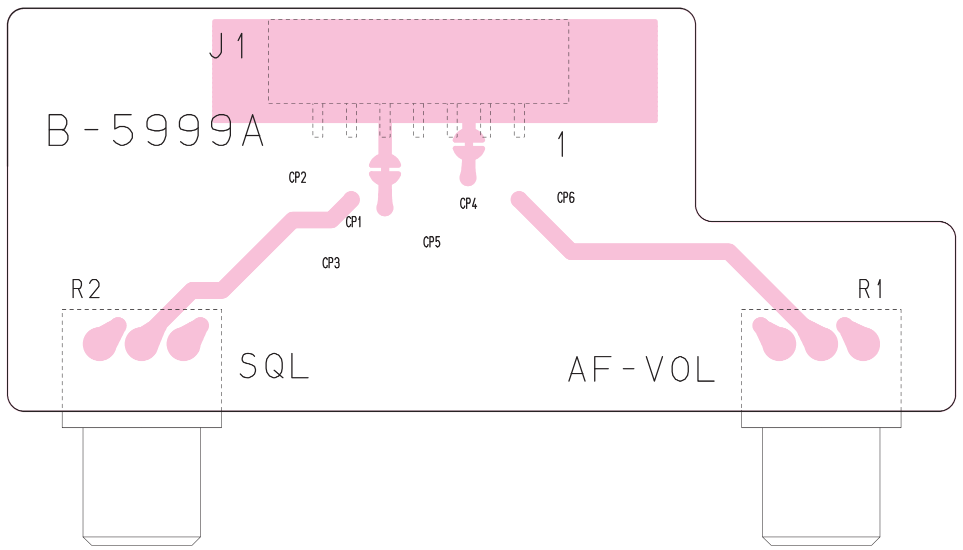
TVCO UNIT

● BOTTOM VIEW



VR UNIT

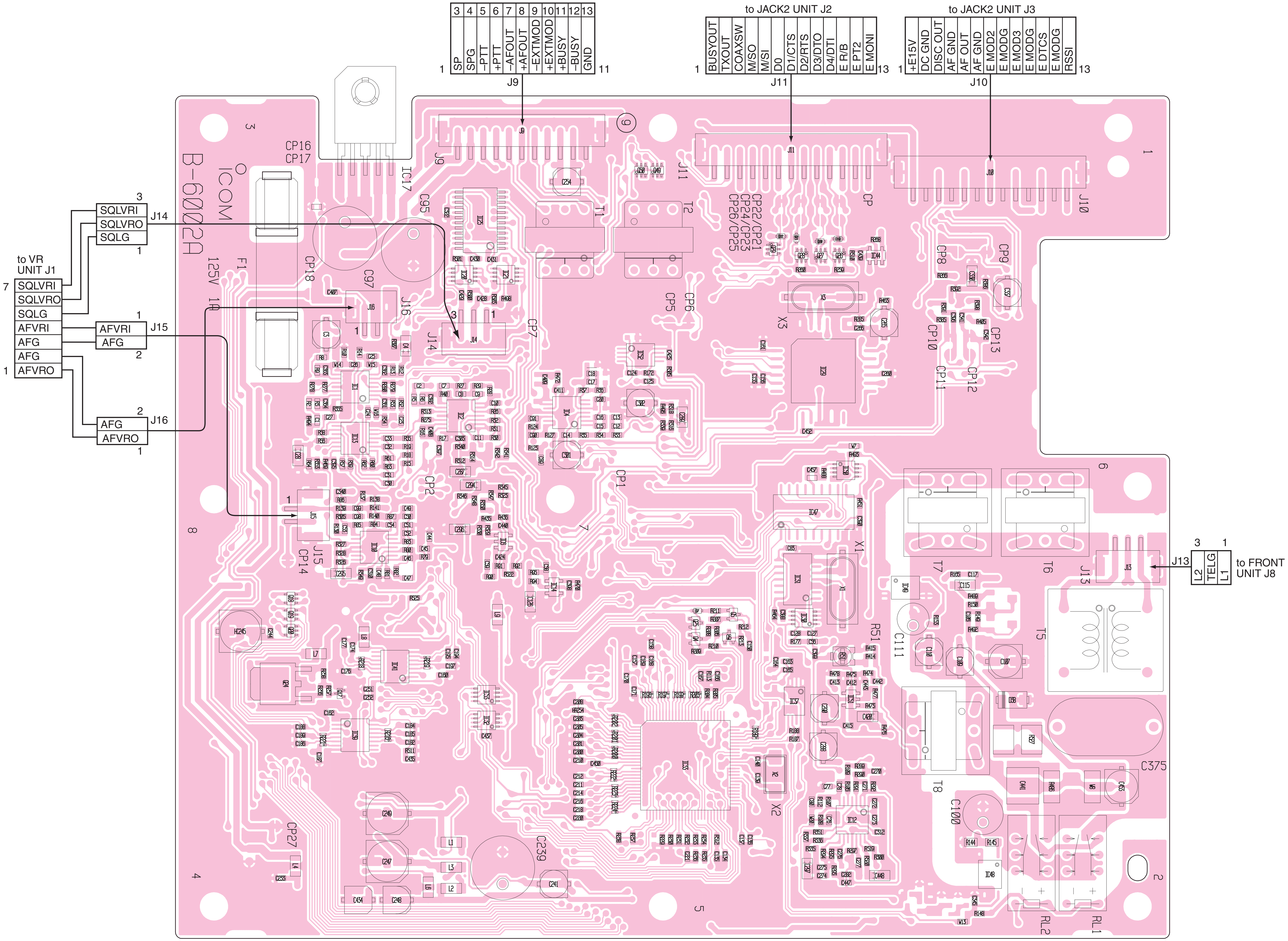
● BOTTOM VIEW



9 - 5 LOGIC UNIT

● TOP VIEW

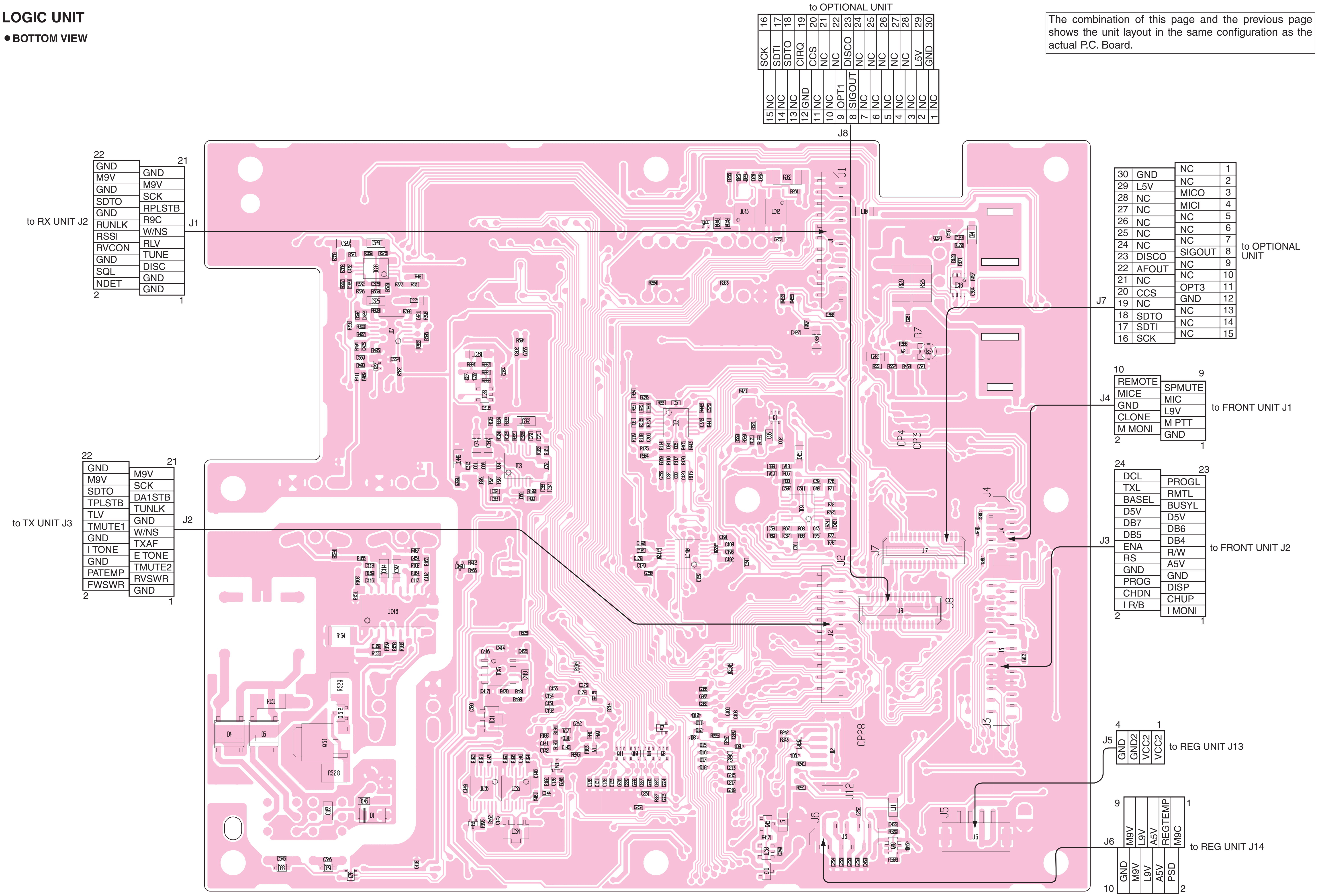
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LOGIC UNIT

- **BOTTOM VIEW**

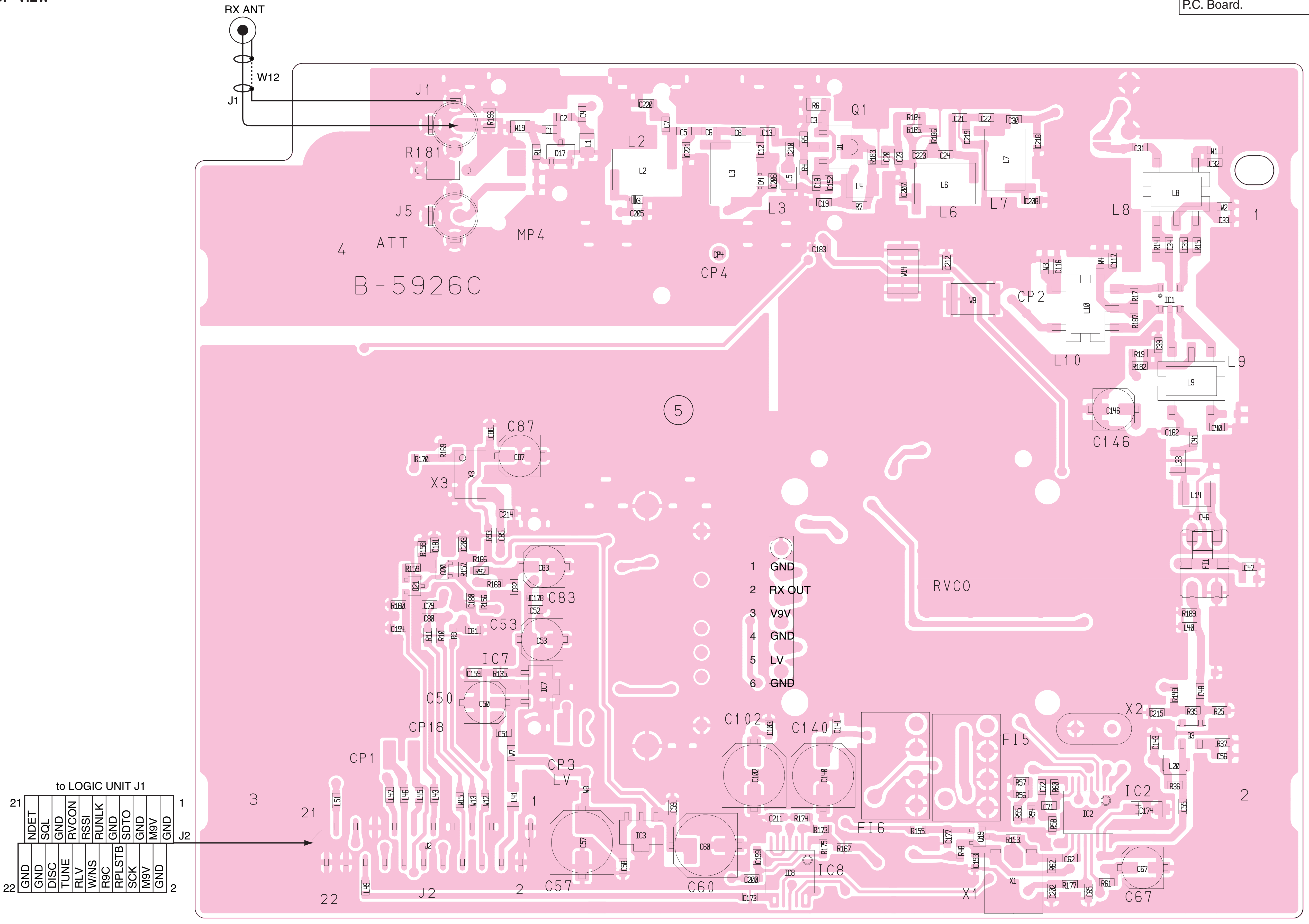
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9 - 6 RX UNIT

• **TOP VIEW**

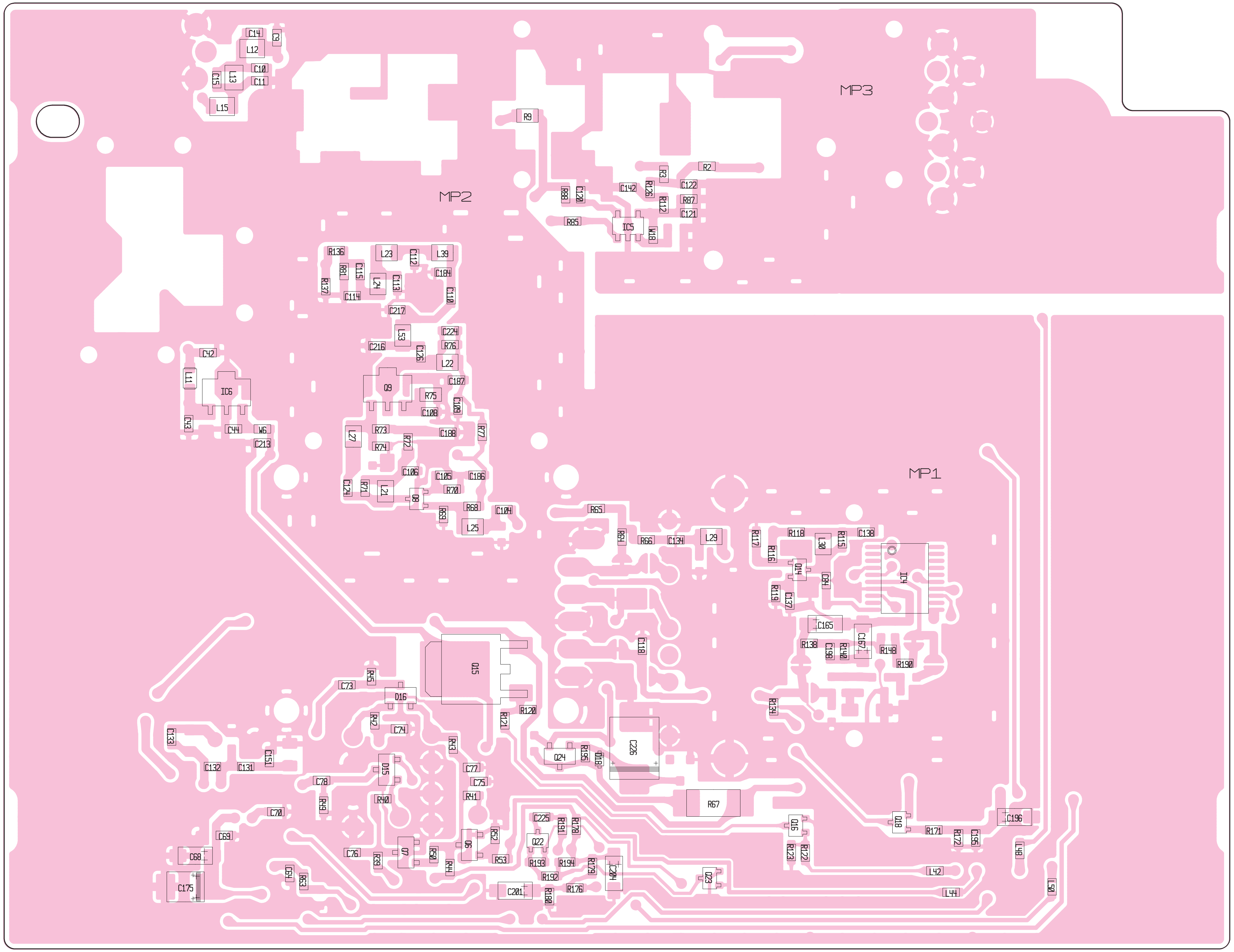
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



RX UNIT

- **BOTTOM VIEW**

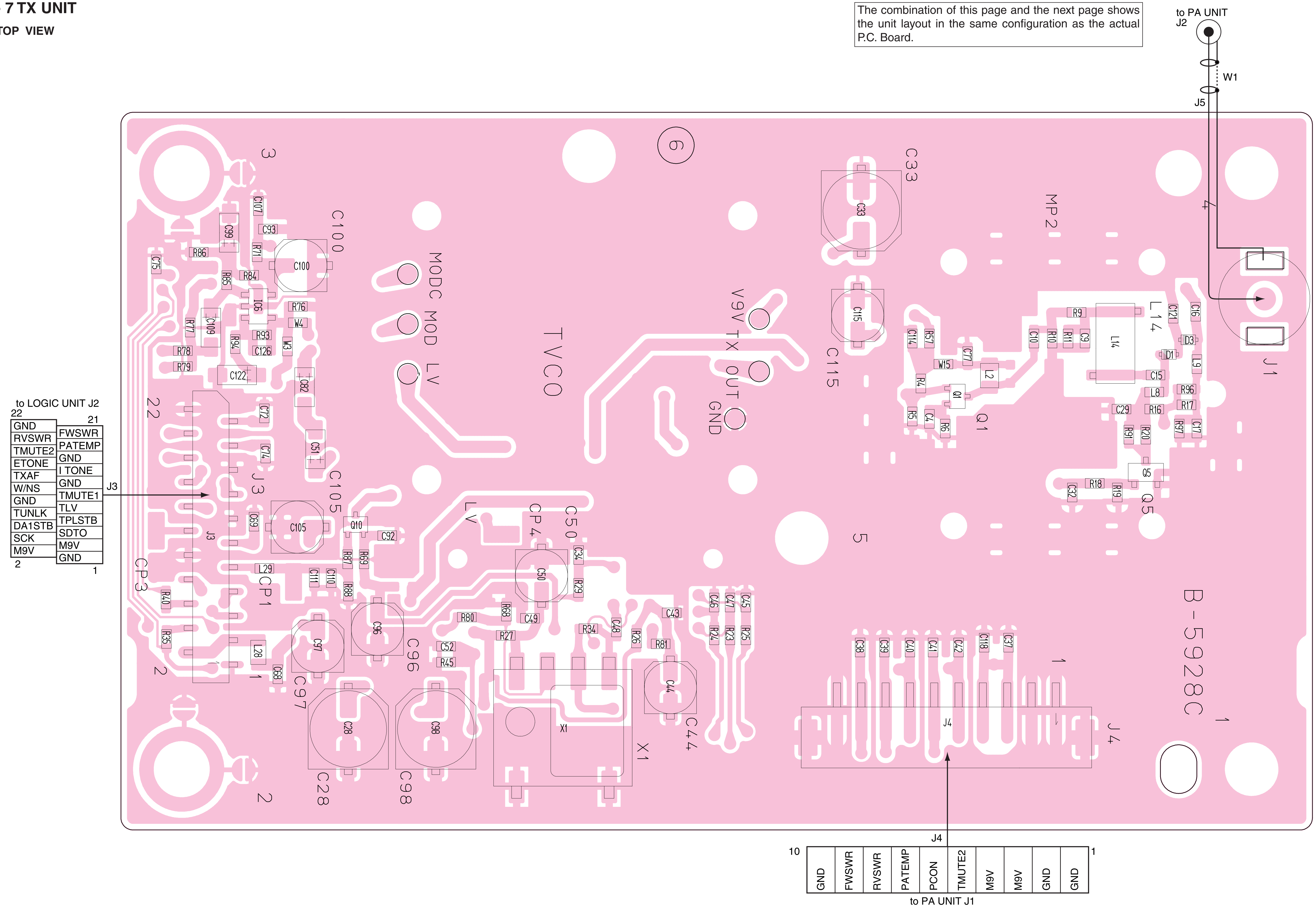
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



9 - 7 TX UNIT

• TOP VIEW

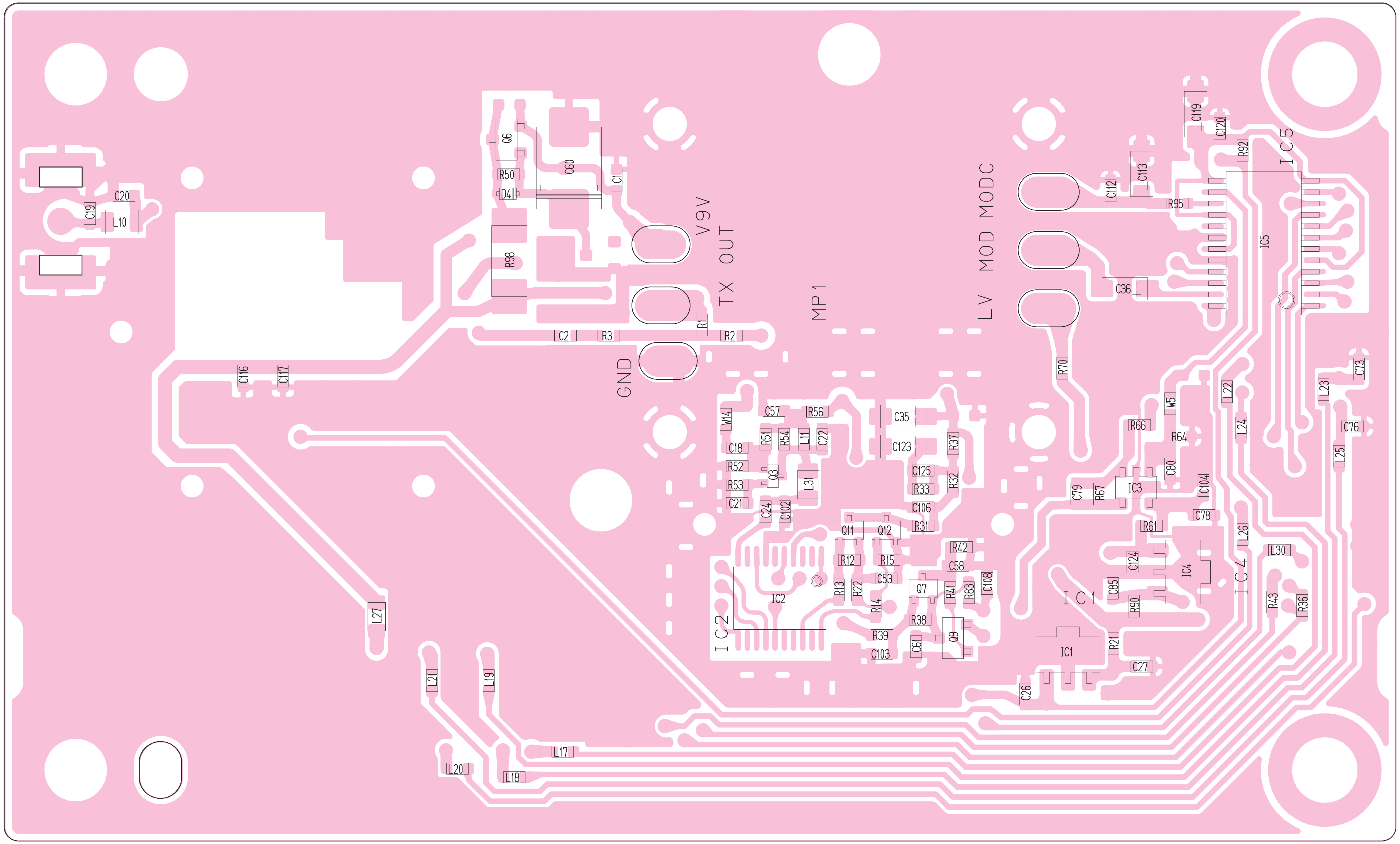
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



TX UNIT

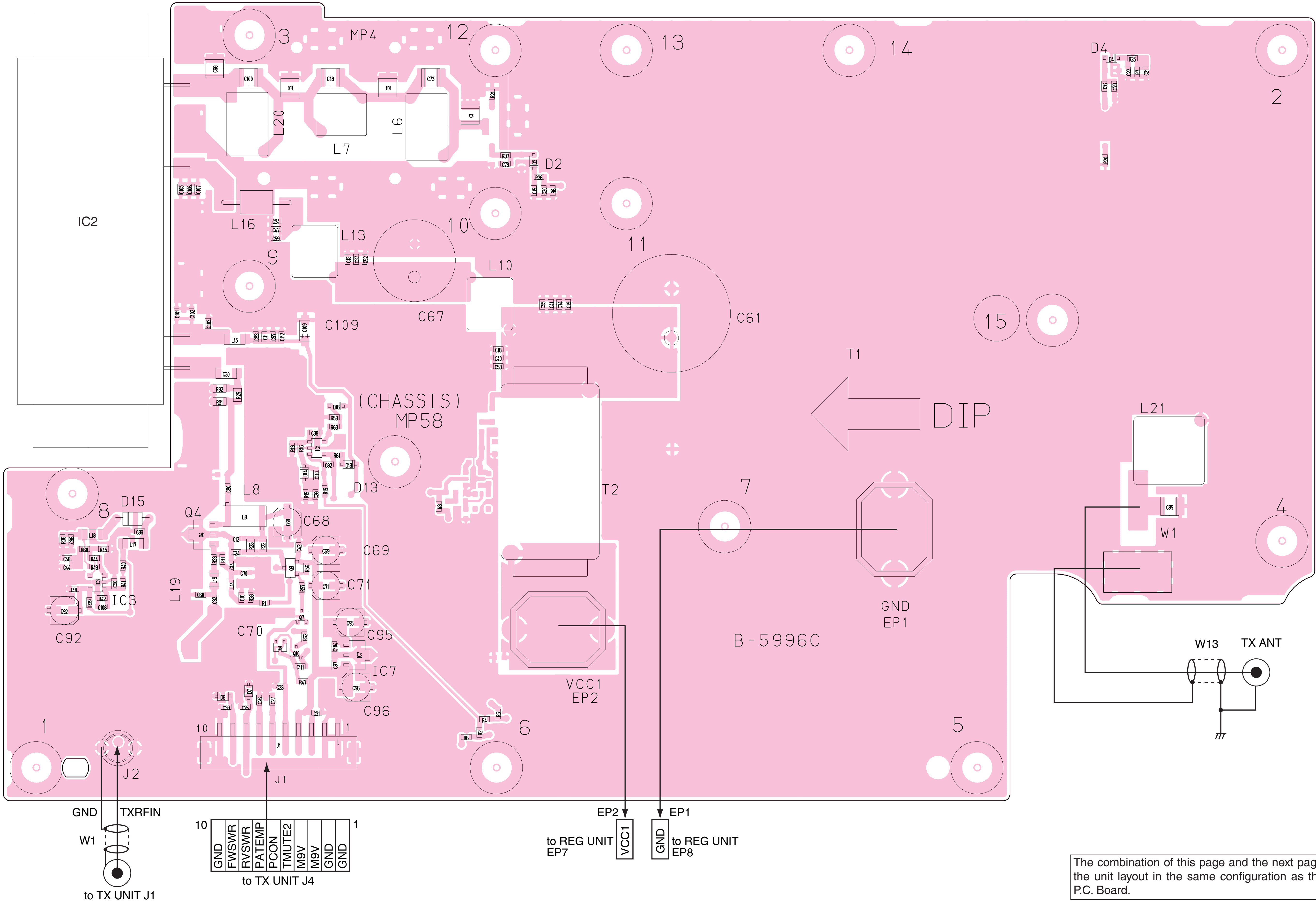
• BOTTOM VIEW

The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



9 - 8 PA UNIT

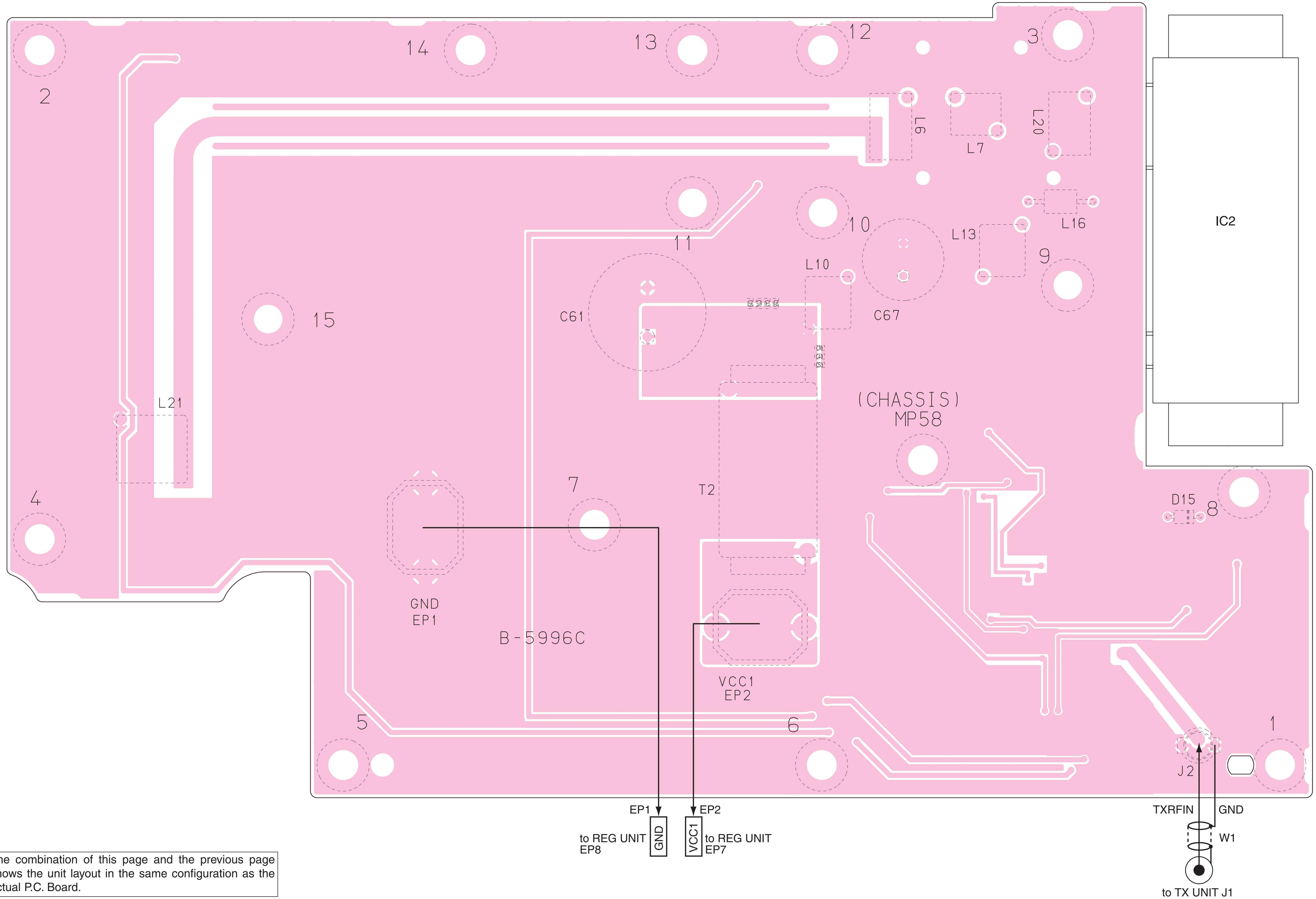
• TOP VIEW



The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

PA UNIT

● **BOTTOM VIEW**

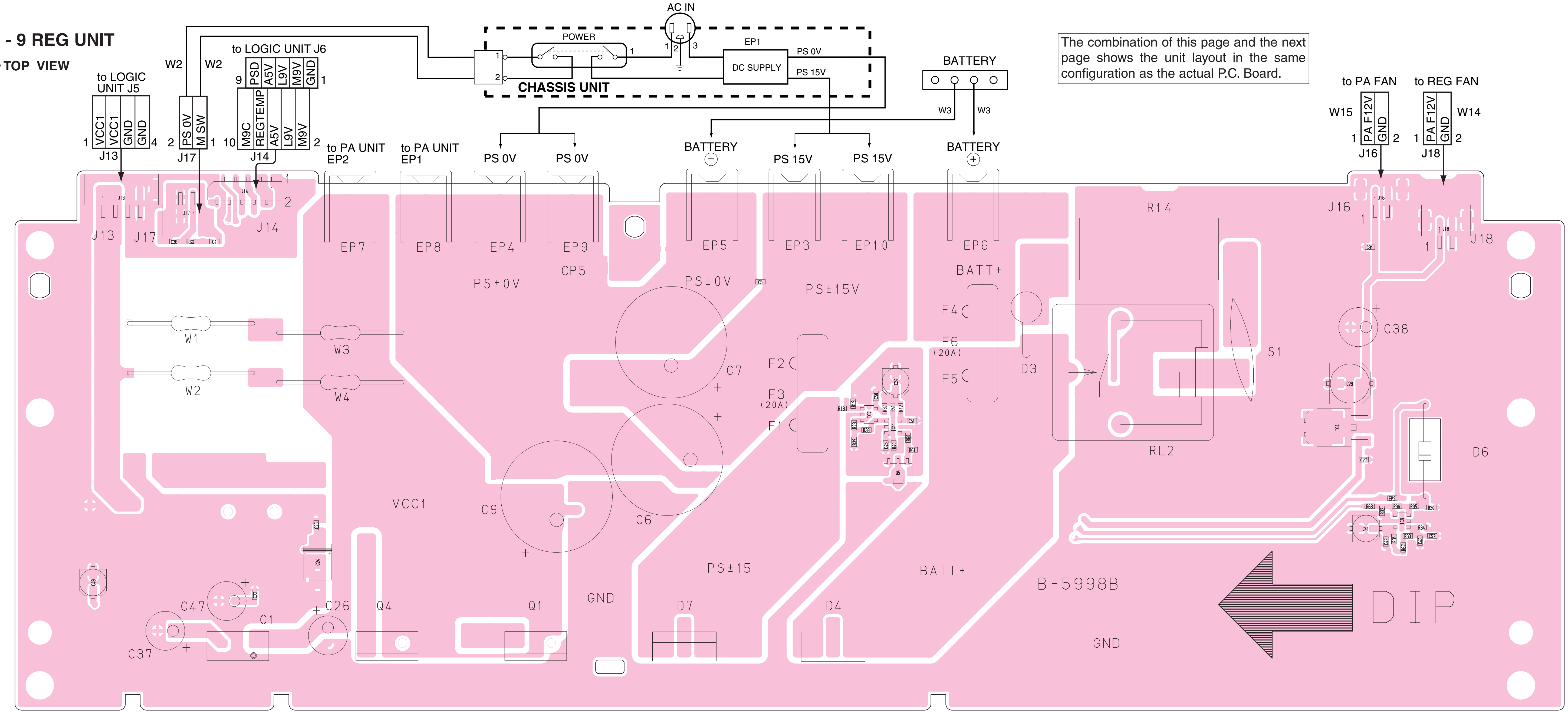


The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

9 - 9 REG UNIT

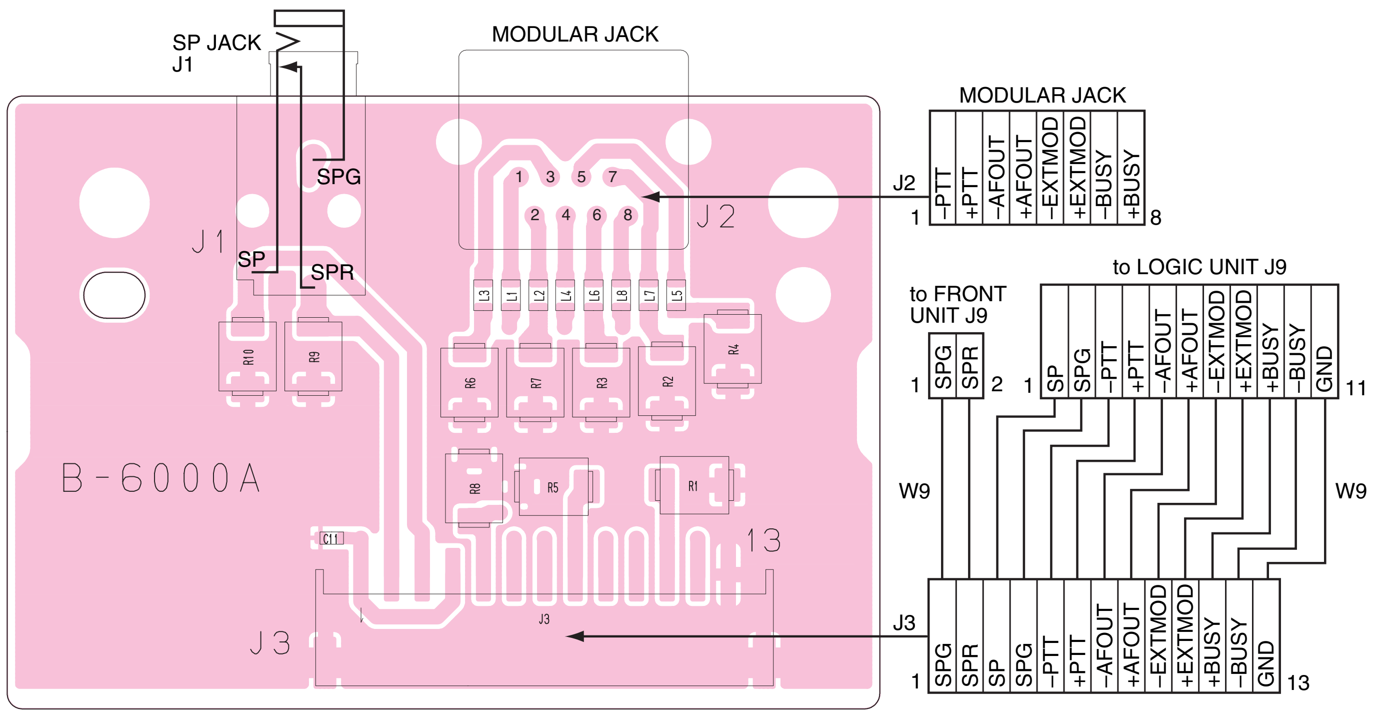
● TOP VIEW

The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



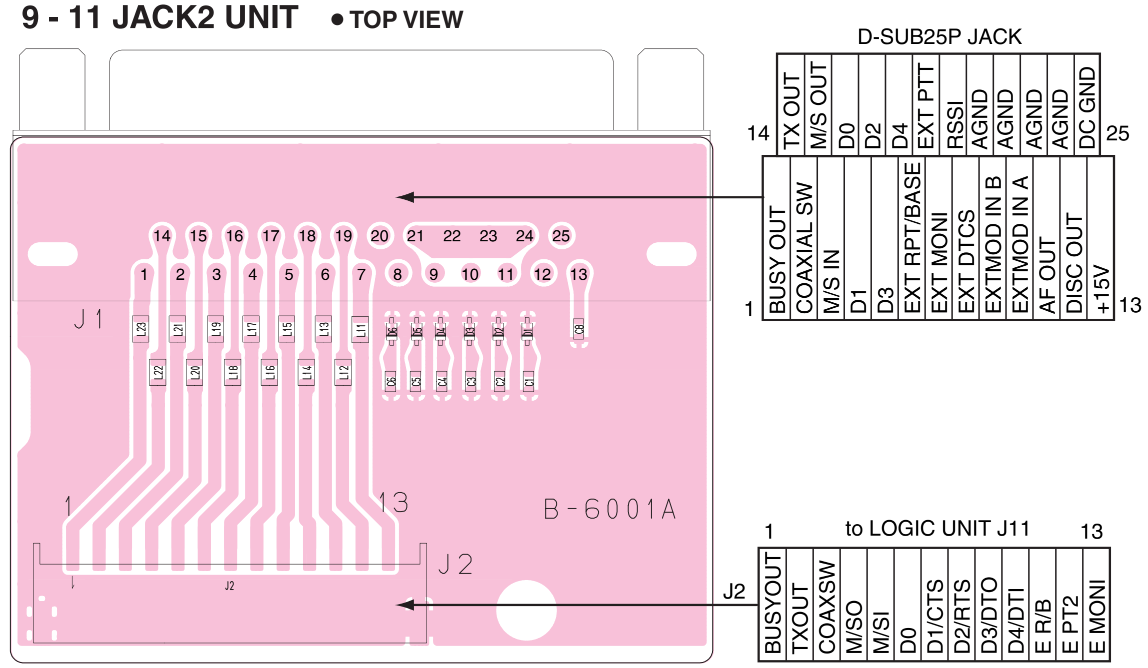
9 - 10 JACK1 UNIT

● TOP VIEW



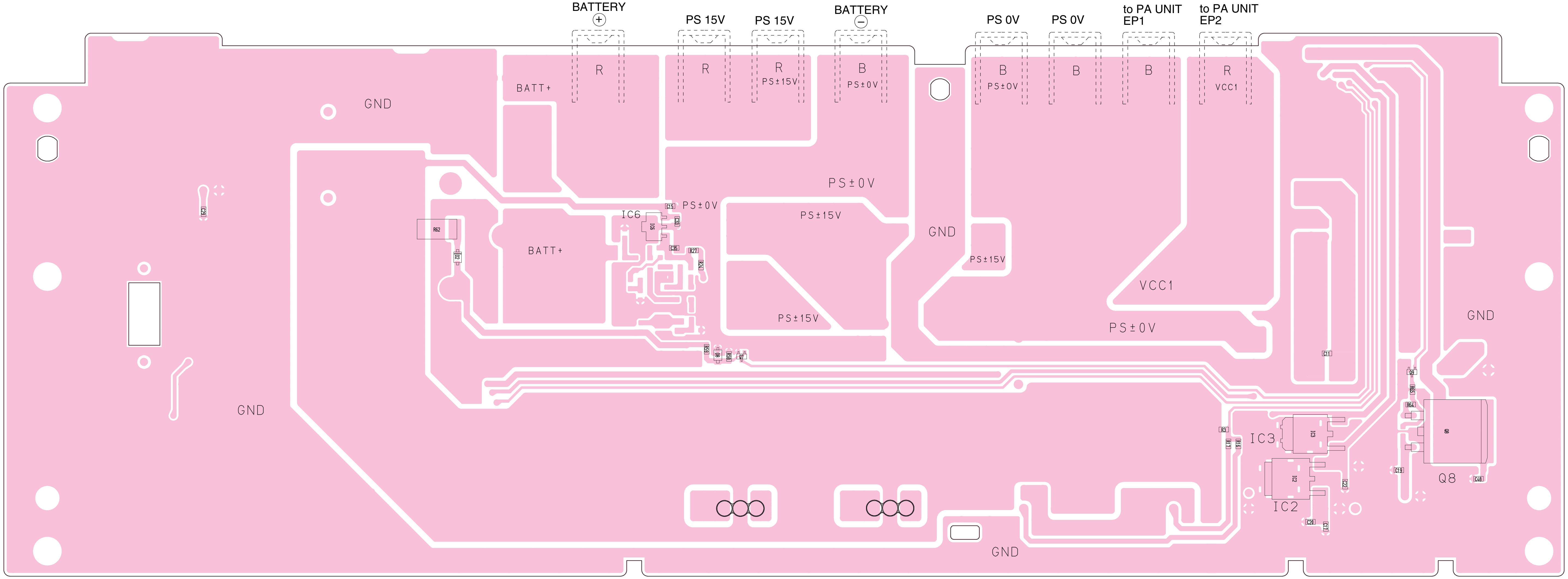
9 - 11 JACK2 UNIT

● TOP VIEW

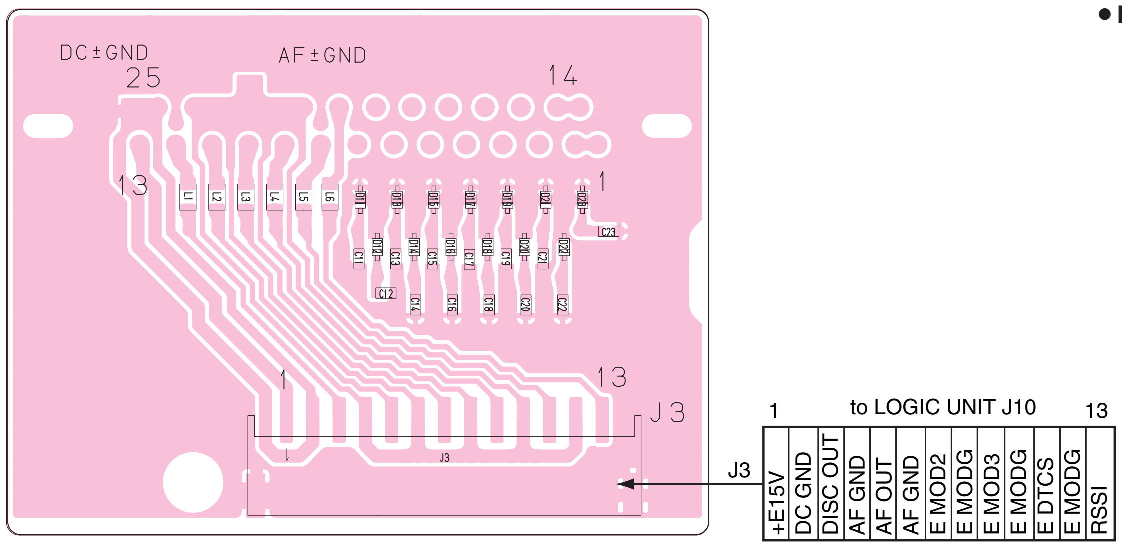


REG UNIT
• BOTTOM VIEW

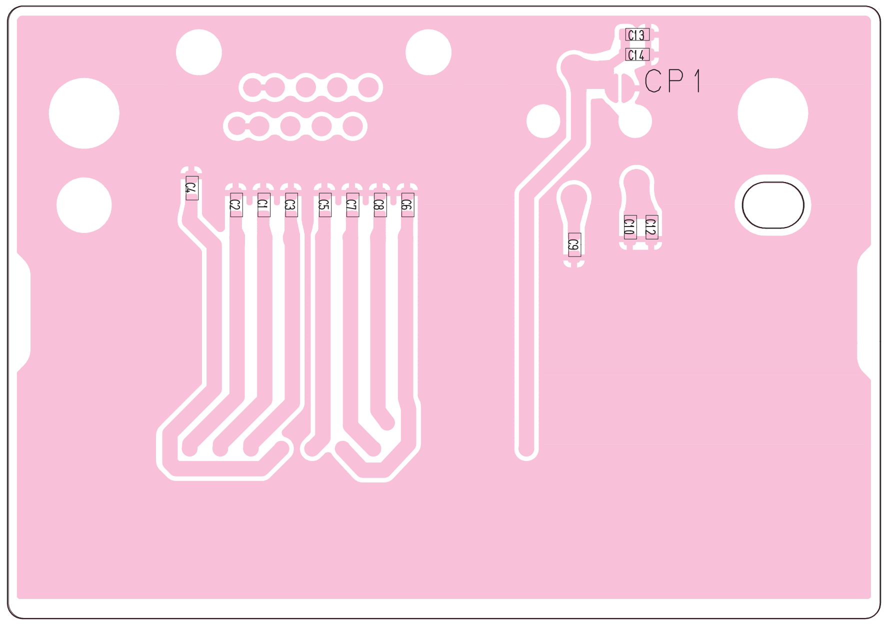
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



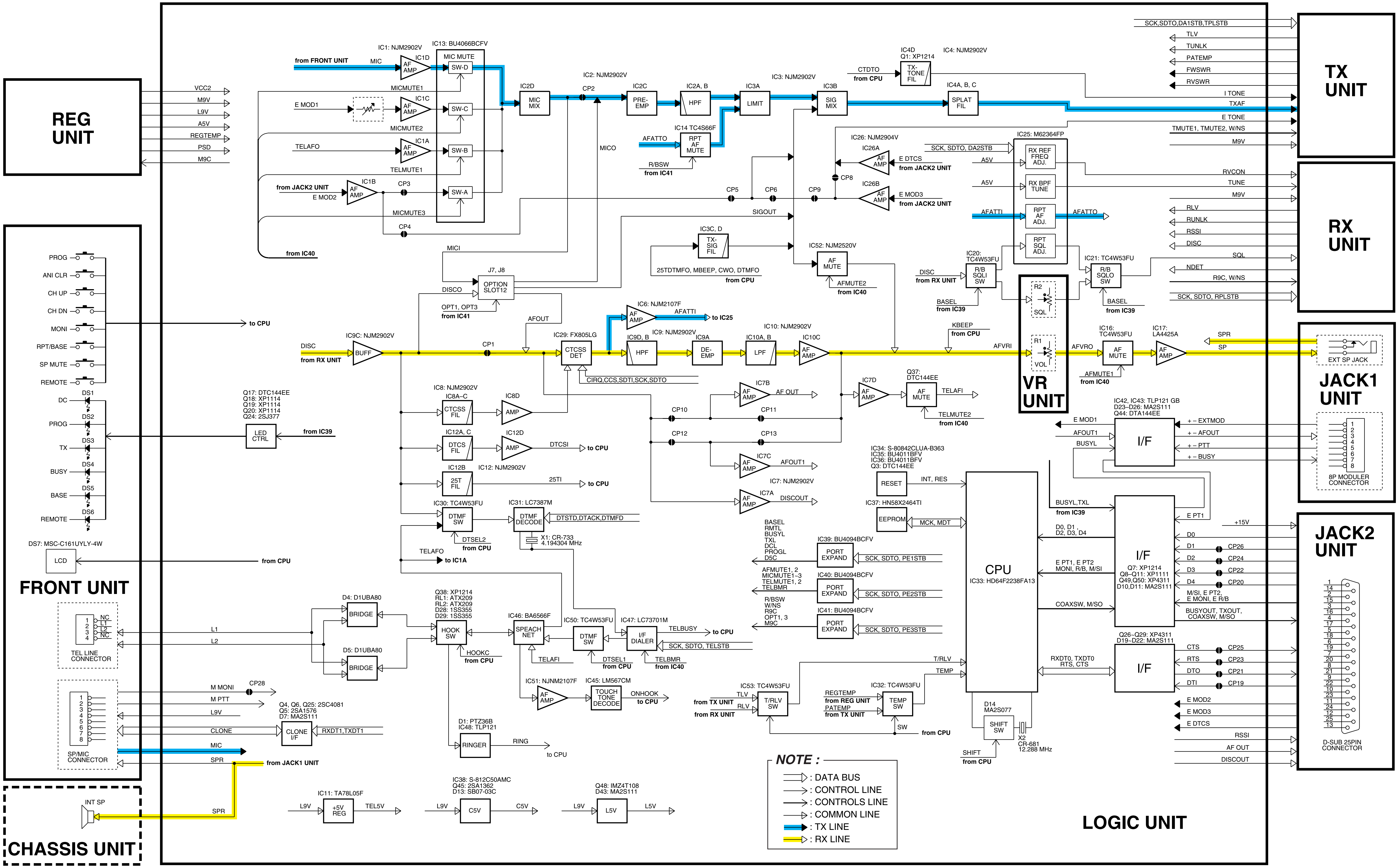
JACK2 UNIT
• BOTTOM VIEW

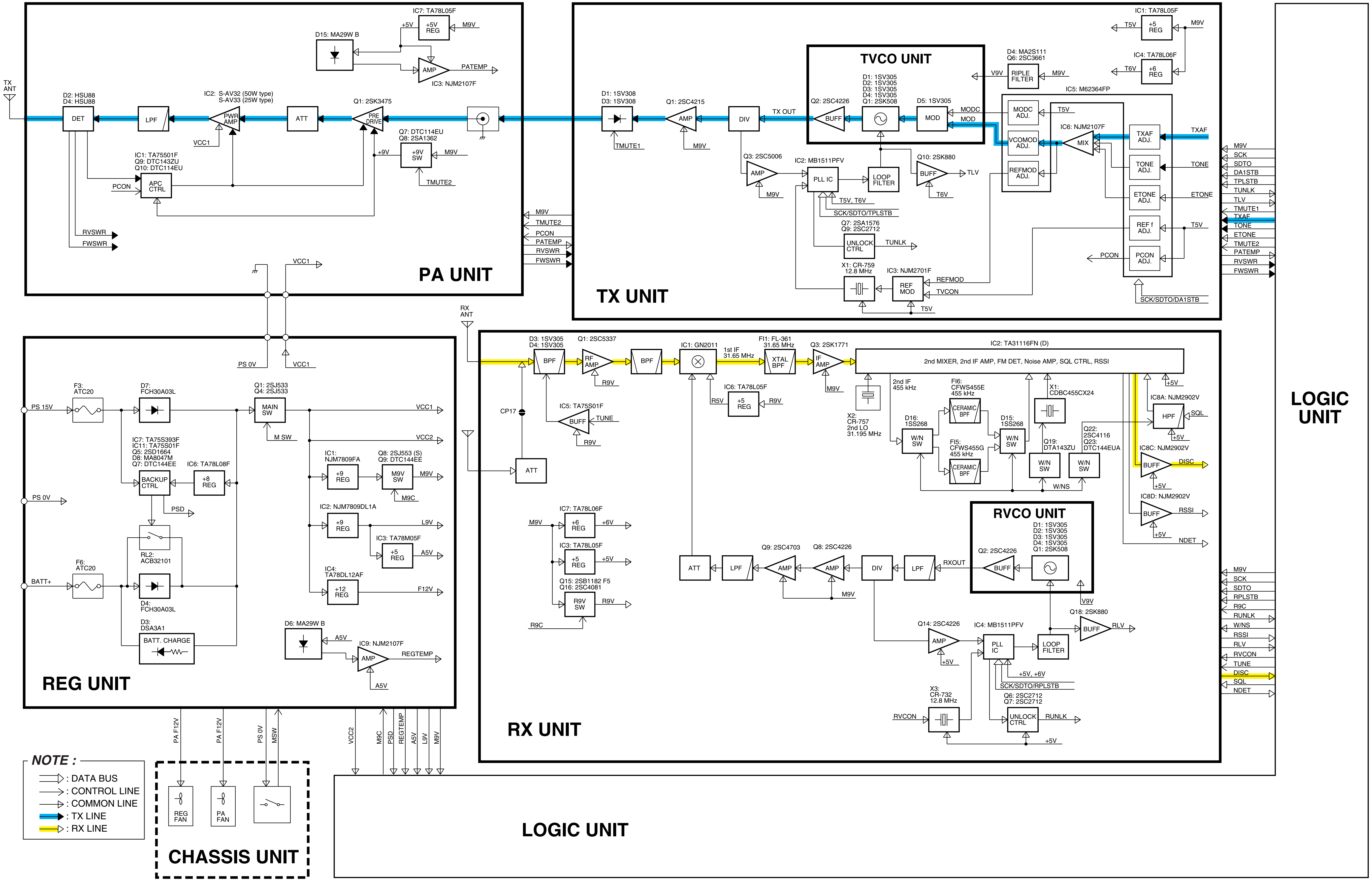


JACK1 UNIT
• BOTTOM VIEW

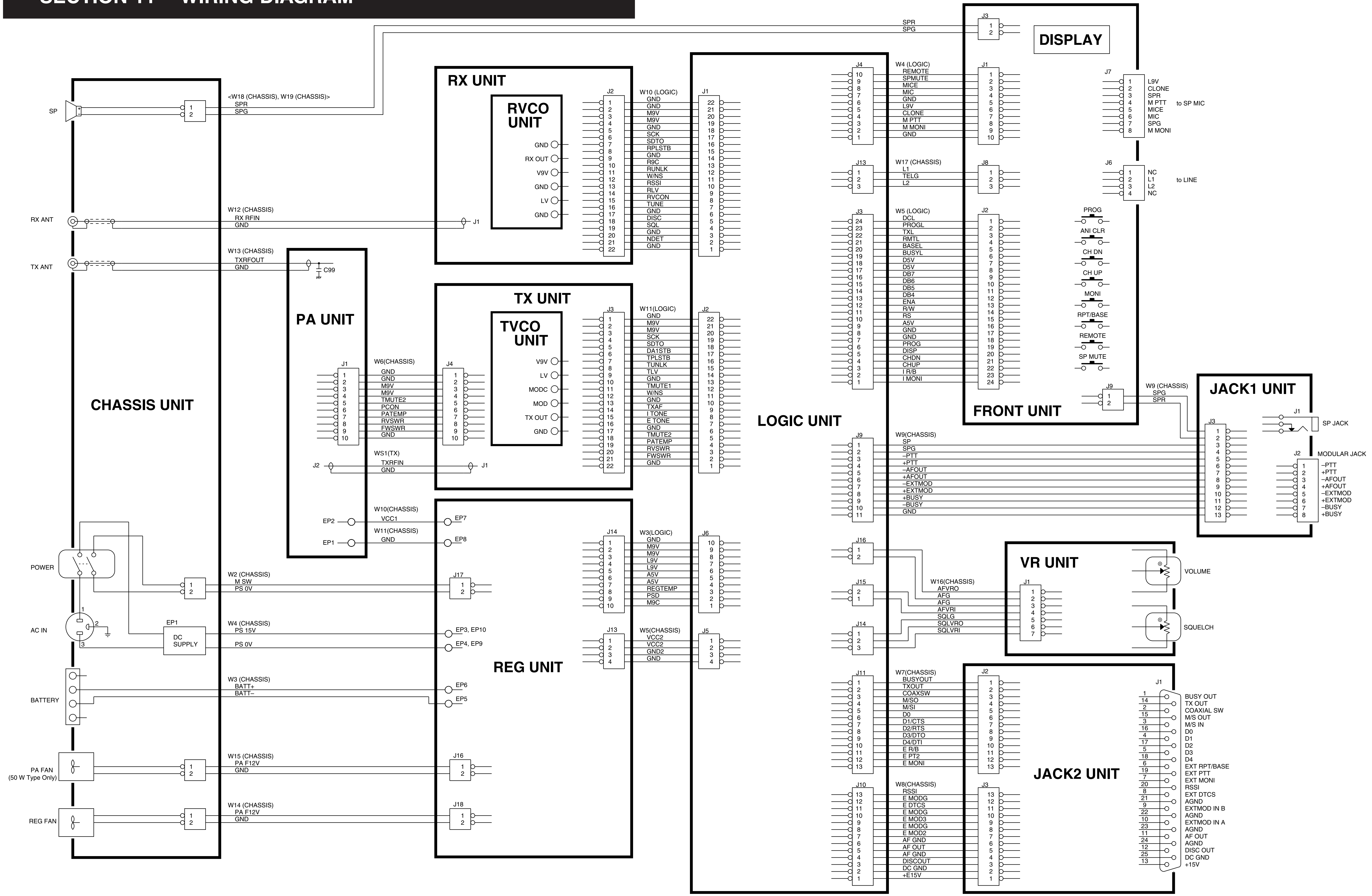


SECTION 10 BLOCK DIAGRAM

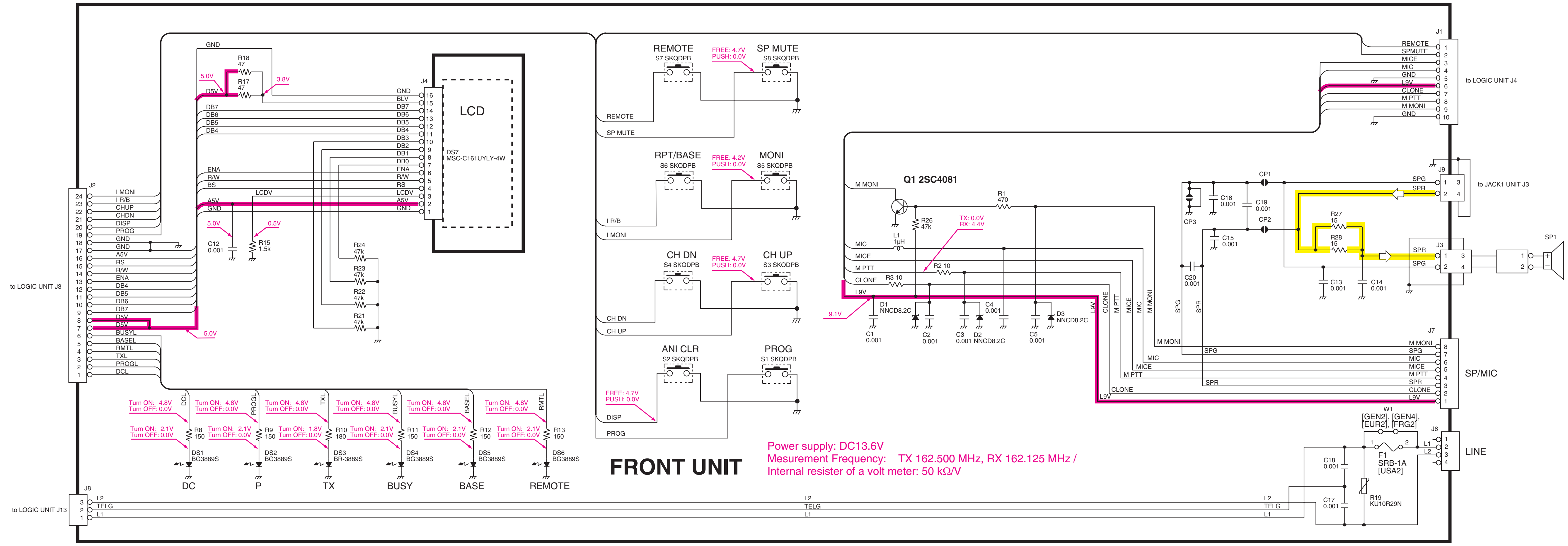


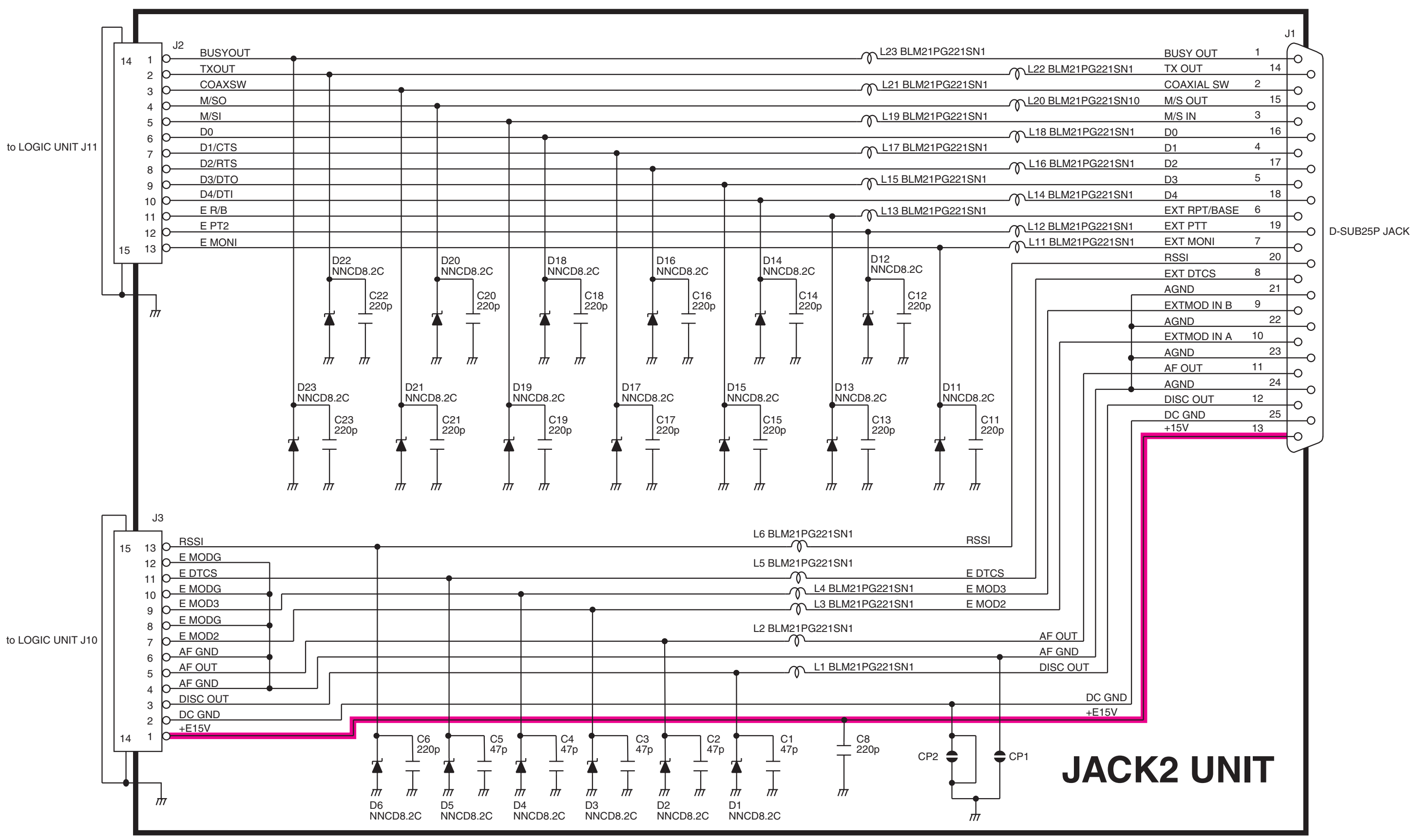

PA UNIT
TX UNIT
TVCO UNIT
RX UNIT
RVCO UNIT
REG UNIT
LOGIC UNIT
CHASSIS UNIT
TX ANT
RX ANT
D2: HSU88
D4: HSU88
DET
LPF
IC2: S-AV32 (50W type)
S-AV33 (25W type)
PWR AMP
ATT
Q1: 2SK3475
PRE DRIVE
D15: MA29W B
IC7: TA78L05F
+5V REG
AMP
IC3: NJM2107F
PATEMP
Q7: DTC114EU
Q8: 2SA1362
+9V SW
TMUTE2
IC1: TA75501F
Q9: DTC143ZU
Q10: DTC114EU
APC CTRL
PCON
VCC1
RVSWR
FWSWR
M9V
D1: 1SV308
D3: 1SV308
TMUTE1
Q1: 2SC4215
DIV
TX OUT
Q2: 2SC4226
BUFF
D1: 1SV305
D2: 1SV305
D3: 1SV305
D4: 1SV305
Q1: 2SK508
D5: 1SV305
MOD
MODC
D4: MA2S111
Q6: 2SC3661
RIPLE FILTER
V9V
IC1: TA78L05F
T5V
IC4: TA78L06F
+6 REG
T6V
IC5: M62364FP
MODC ADJ.
VCOMOD ADJ.
REFMOD ADJ.
IC6: NJM2107F
MIX
TXAF ADJ.
TONE ADJ.
ETONE ADJ.
REF f ADJ.
PCON ADJ.
TXAF
TONE
ETONE
Q3: 2SC5006
IC2: MB1511PFV
PLL IC
LOOP FILTER
Q10: 2SK880
TLV
T5V, T6V
SCK/SDTO/TPLSTB
Q7: 2SA1576
Q9: 2SC2712
UNLOCK CTRL
TUNLK
X1: CR-759
12.8 MHz
IC3: NJM2701F
REF MOD
REFMOD
TVCON
SCK/SDTO/DA1STB
SCK
SDTO
DA1STB
TPLSTB
D3: 1SV305
D4: 1SV305
Q1: 2SC5337
BPF
RF AMP
R9V
IC1: GN2011
1st IF
31.65 MHz
FI1: FL-361
31.65 MHz
XTAL BPF
Q3: 2SK1771
IF AMP
IC2: TA31116FN (D)
2nd MIXER, 2nd IF AMP, FM DET, Noise AMP, SQL CTRL, RSSI
CP17
IC5: TA75S01F
TUNE
IC6: TA78L05F
R5V
2nd IF
455 kHz
X2: CR-757
2nd LO
31.195 MHz
FI6: CFWS455E
455 kHz
CERAMIC BPF
FI5: CFWS455G
455 kHz
D16: 1SS268
D15: 1SS268
W/N SW
X1: CDBC455CX24
Q19: DTA143ZU
Q22: 2SC4116
Q23: DTC144EUA
W/NS
IC8A: NJM2902V
HPF
SQL
IC8C: NJM2902V
DISC
IC8D: NJM2902V
RSSI
NDET
IC7: TA78L06F
+6V
IC3: TA78L05F
+5V
Q15: 2SB1182 F5
Q16: 2SC4081
R9V SW
R9C
Q9: 2SC4703
Q8: 2SC4226
RXOUT
D1: 1SV305
D2: 1SV305
D3: 1SV305
D4: 1SV305
Q1: 2SK508
Q18: 2SK880
RLV
Q14: 2SC4226
IC4: MB1511PFV
+5V, +6V
SCK/SDTO/RPLSTB
X3: CR-732
12.8 MHz
RVCON
Q6: 2SC2712
Q7: 2SC2712
RUNLK
RPLSTB
PS 15V
PS 0V
BATT+
F3: ATC20
F6: ATC20
D7: FCH30A03L
Q1: 2SJ533
Q4: 2SJ533
MAIN SW
M SW
VCC2
IC7: TA75S393F
IC11: TA75S01F
Q5: 2SD1664
D8: MA8047M
Q7: DTC144EE
BACKUP CTRL
IC6: TA78L08F
+8 REG
PSD
RL2: ACB32101
D4: FCH30A03L
D3: DSA3A1
BATT. CHARGE
IC1: NJM7809FA
+9 REG
Q8: 2SJ553 (S)
Q9: DTC144EE
M9V SW
M9C
IC2: NJM7809DL1A
L9V
IC3: TA78M05F
A5V
IC4: TA78DL12AF
+12 REG
F12V
D6: MA29W B
IC9: NJM2107F
REGTEMP
PA F12V
MSW
REG FAN
PA FAN
NOTE :
: DATA BUS
: CONTROL LINE
: COMMON LINE
: TX LINE
: RX LINE

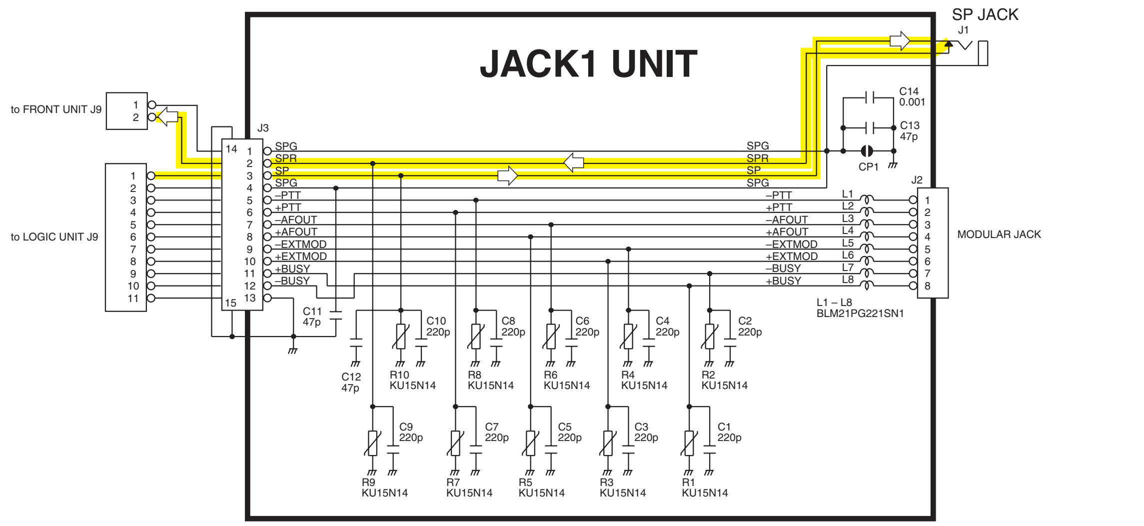
SECTION 11 WIRING DIAGRAM



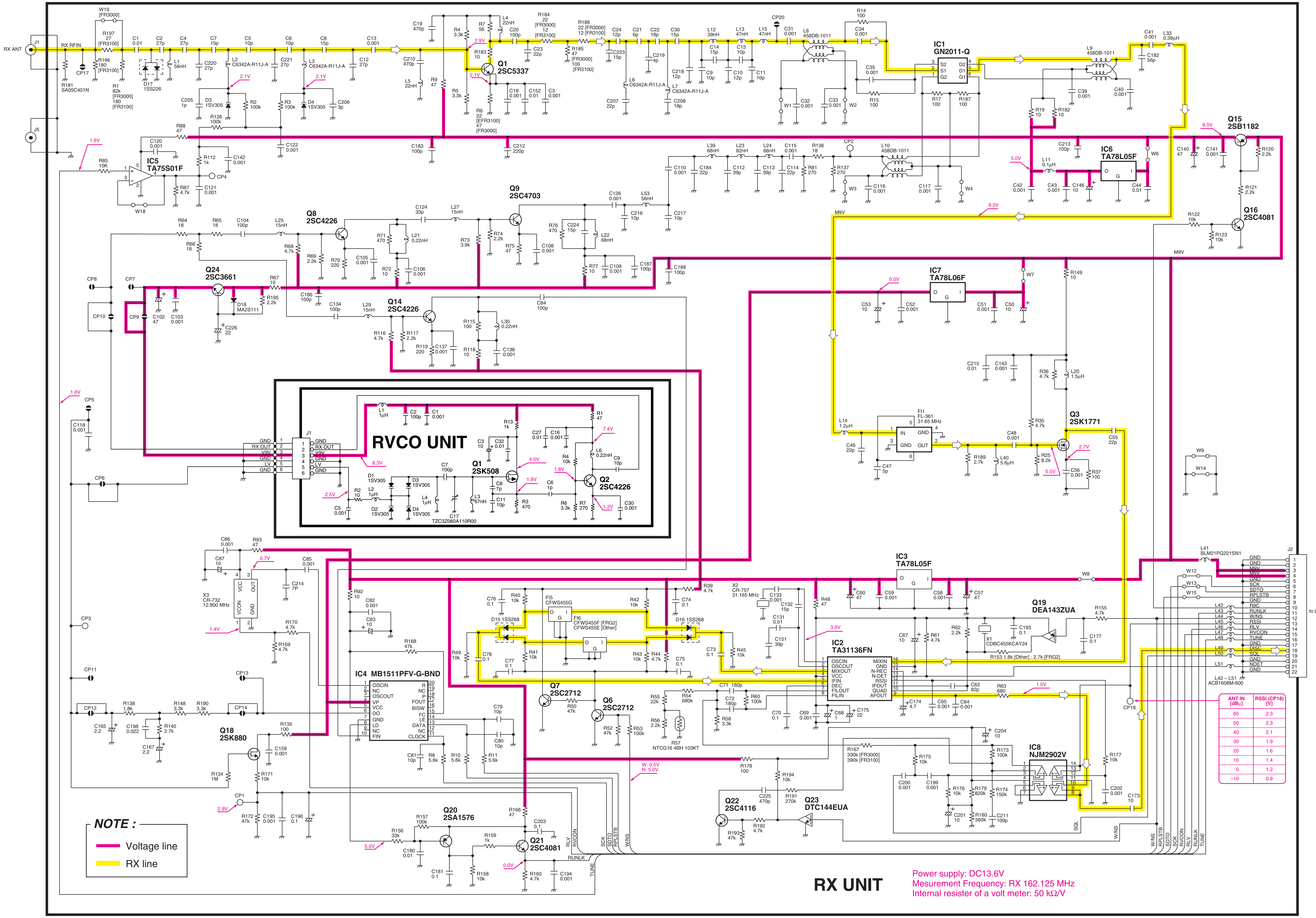
SECTION 12 VOLTAGE DIAGRAM



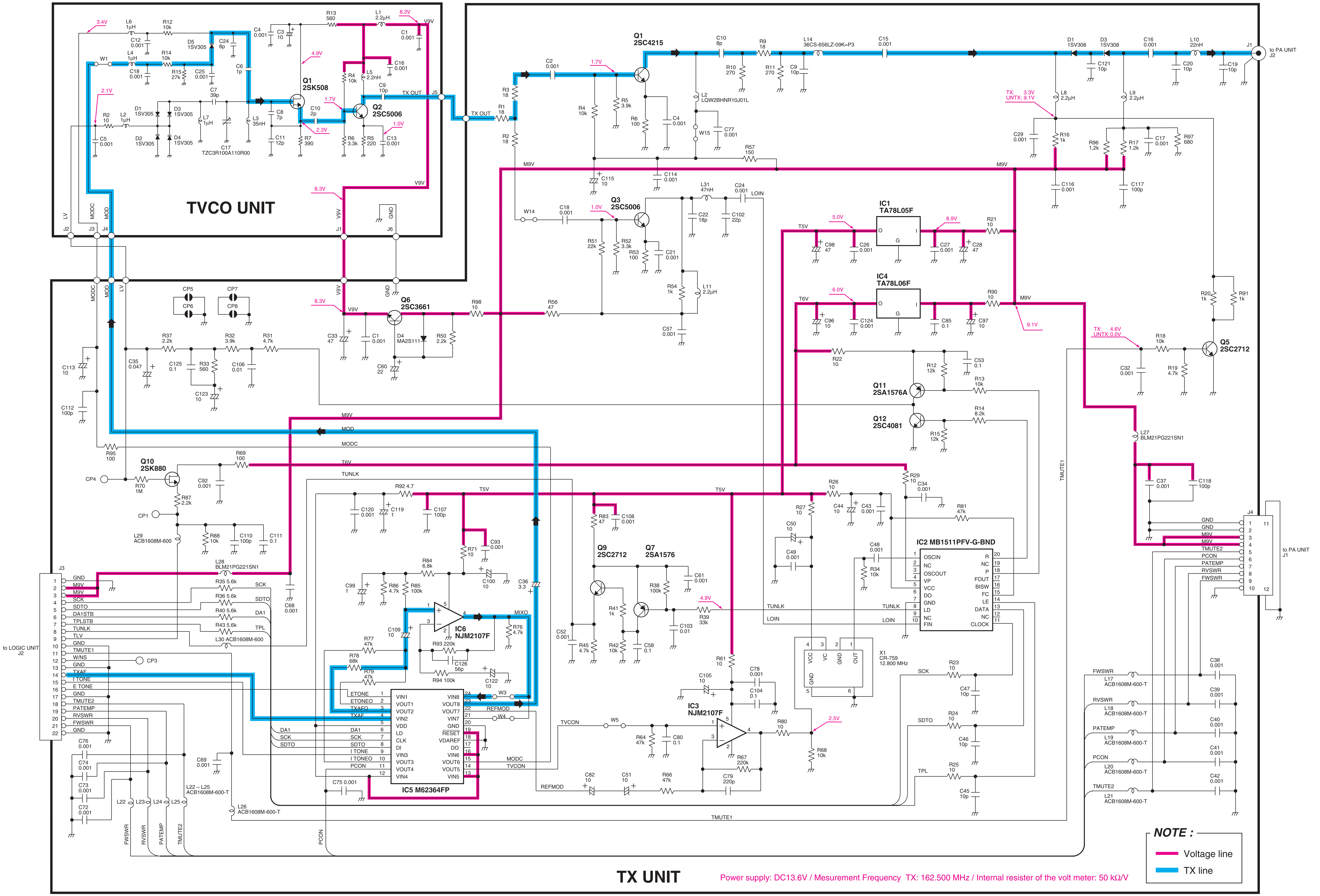


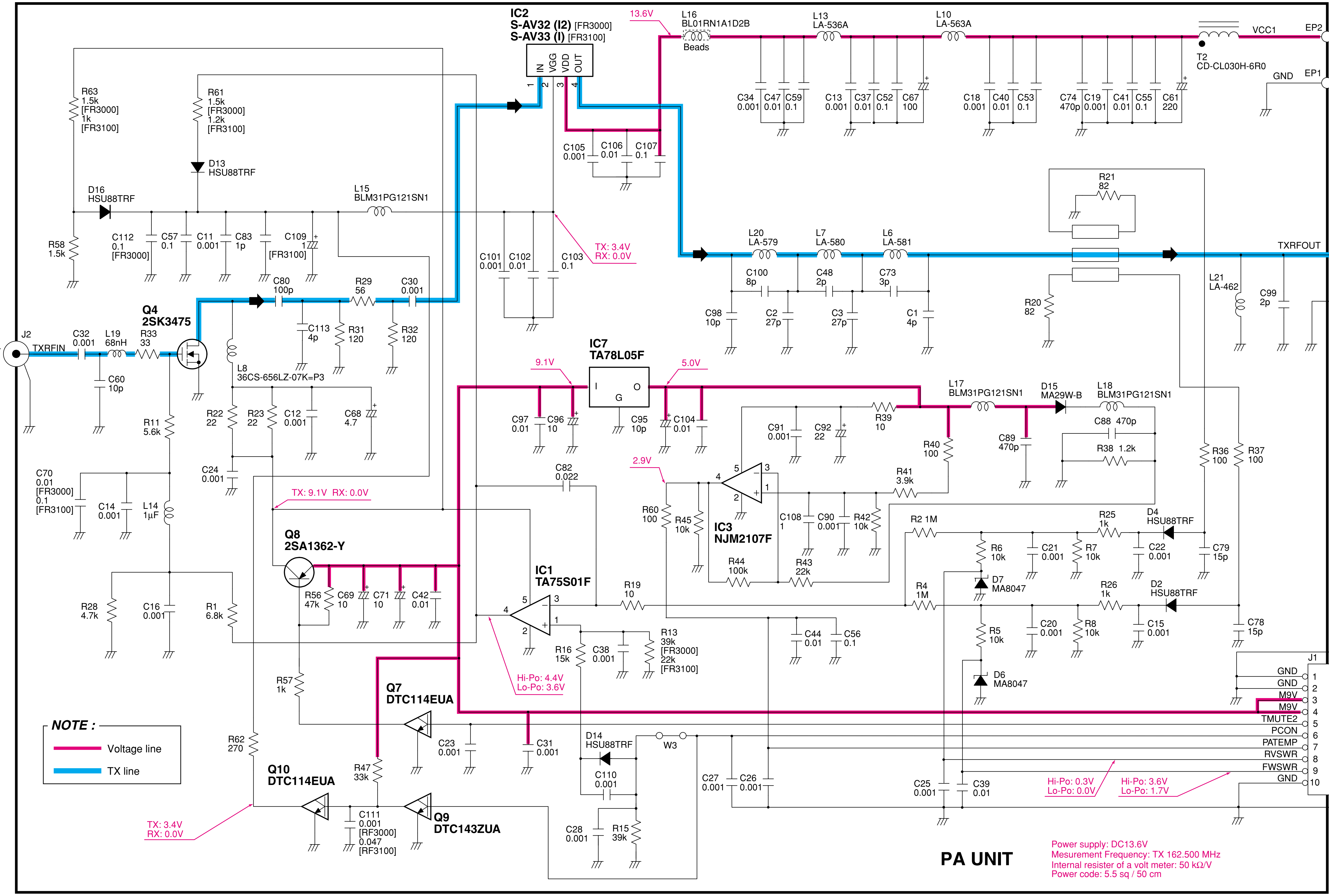


NOTE :
- Voltage line
- RX line

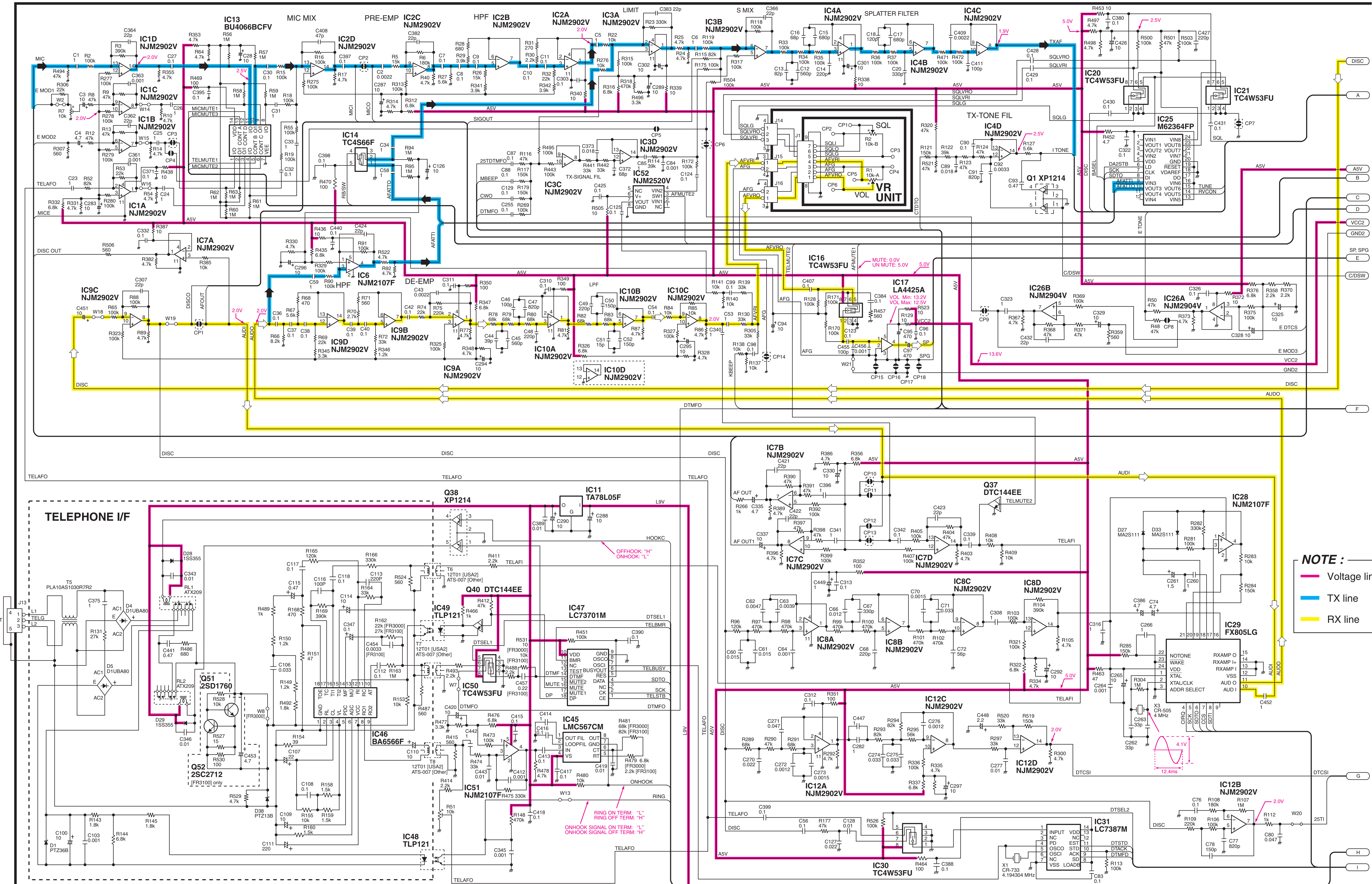


ANT IN [dBμ]	RSSI (CP18) [V]
60	2.3
50	2.3
40	2.1
30	1.9
20	1.6
10	1.4
0	1.2
–10	0.9


TVCO UNIT
TX UNIT
Q1 2SK508
Q2 2SC5006
Q1 2SC4215
Q3 2SC5006
Q5 2SC2712
Q6 2SC3661
Q7 2SA1576
Q9 2SC2712
Q10 2SK880
Q11 2SA1576A
Q12 2SC4081
IC1 TA78L05F
IC2 MB1511PFV-G-BND
IC3 NJM2107F
IC4 TA78L06F
IC5 M62364FP
IC6 NJM2107F
X1 CR-759 12.800 MHz
to PA UNIT J2
to PA UNIT J1
to LOGIC UNIT J2
NOTE :
Voltage line
TX line
Power supply: DC13.6V / Mesurement Frequency TX: 162.500 MHz / Internal resister of the volt meter: 50 kΩ/V

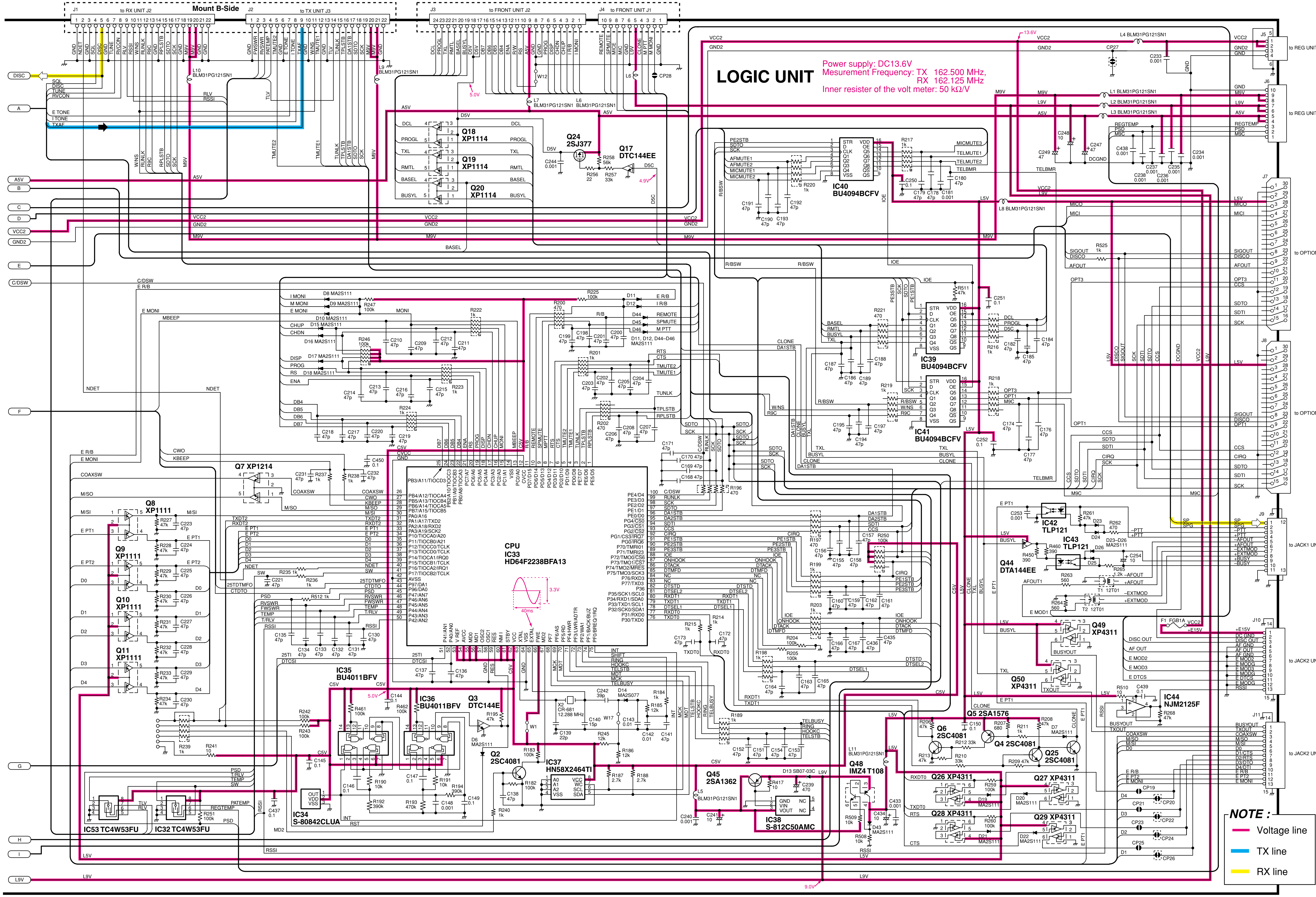


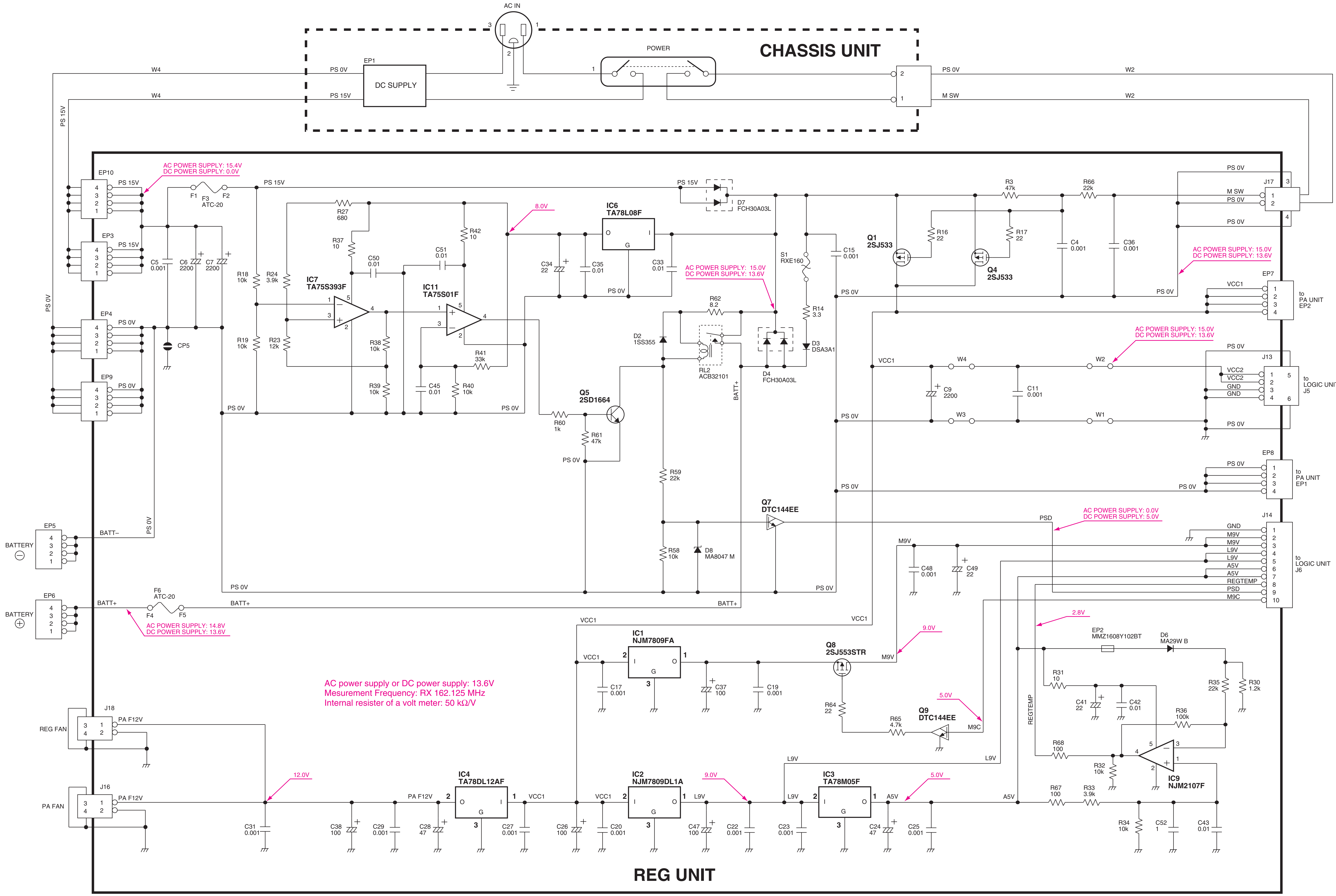
IC2
S-AV32 (I2) [FR3000]
S-AV33 (I) [FR3100]
IN VGG VDD OUT
13.6V
L16
BL01RN1A1D2B
Beads
L13
LA-536A
L10
LA-563A
VCC1
EP2
to REG UNIT EP7
T2
CD-CL030H-6R0
GND
EP1
to REG UNIT EP8
C34 0.001
C47 0.01
C59 0.1
C13 0.001
C37 0.01
C52 0.1
C67 100
C18 0.001
C40 0.01
C53 0.1
C74 470p
C19 0.001
C41 0.01
C55 0.1
C61 220
R63 1.5k [FR3000] 1k [FR3100]
R61 1.5k [FR3000] 1.2k [FR3100]
D13 HSU88TRF
C105 0.001
C106 0.01
C107 0.1
D16 HSU88TRF
L15 BLM31PG121SN1
R58 1.5k
C112 0.1 [FR3000]
C57 0.1
C11 0.001
C83 1p
C109 1 [FR3100]
C101 0.001
C102 0.01
C103 0.1
TX: 3.4V
RX: 0.0V
R21 82
L20 LA-579
L7 LA-580
L6 LA-581
TXRFOUT
TX ANT
C100 8p
C48 2p
C73 3p
C98 10p
C2 27p
C3 27p
C1 4p
R20 82
L21 LA-462
C99 2p
C80 100p
R29 56
C30 0.001
Q4
2SK3475
J2
C32 0.001
L19 68nH
R33 33
to TX UNIT J1
TXRFIN
C60 10p
C113 4p
R31 120
R32 120
L8
36CS-656LZ-07K=P3
IC7
TA78L05F
9.1V
5.0V
I O G
L17 BLM31PG121SN1
D15 MA29W-B
L18 BLM31PG121SN1
R11 5.6k
R22 22
R23 22
C12 0.001
C68 4.7
C97 0.01
C96 10
C95 10p
C104 0.01
C91 0.001
C92 22
R39 10
C88 470p
R40 100
C89 470p
R38 1.2k
R36 100
R37 100
C70 0.01 [FR3000] 0.1 [FR3100]
C14 0.001
L14 1μF
C24 0.001
TX: 9.1V RX: 0.0V
C82 0.022
2.9V
R41 3.9k
R60 100
R45 10k
IC3
NJM2107F
C108 1
C90 0.001
R42 10k
R2 1M
R25 1k
D4 HSU88TRF
R6 10k
C21 0.001
R7 10k
C22 0.001
C79 15p
Q8
2SA1362-Y
R44 100k
R43 22k
D7 MA8047
R28 4.7k
C16 0.001
R1 6.8k
R56 47k
C69 10
C71 10
C42 0.01
IC1
TA75S01F
R19 10
R4 1M
R26 1k
D2 HSU88TRF
C20 0.001
R8 10k
C15 0.001
C78 15p
R16 15k
C38 0.001
R13 39k [FR3000] 22k [FR3100]
C44 0.01
C56 0.1
R5 10k
D6 MA8047
Hi-Po: 4.4V
Lo-Po: 3.6V
R57 1k
Q7
DTC114EUA
J1
GND
GND
M9V
M9V
TMUTE2
PCON
PATEMP
RVSWR
FWSWR
GND
to TX UNIT J4
NOTE :
Voltage line
TX line
R62 270
C23 0.001
C31 0.001
D14 HSU88TRF
W3
C110 0.001
C27 0.001
C26 0.001
C25 0.001
C39 0.01
Hi-Po: 0.3V
Lo-Po: 0.0V
Hi-Po: 3.6V
Lo-Po: 1.7V
Q10
DTC114EUA
R47 33k
Q9
DTC143ZUA
C111 0.001 [RF3000] 0.047 [RF3100]
C28 0.001
R15 39k
TX: 3.4V
RX: 0.0V
PA UNIT
Power supply: DC13.6V
Mesurement Frequency: TX 162.500 MHz
Internal resister of a volt meter: 50 kΩ/V
Power code: 5.5 sq / 50 cm



LOGIC UNIT

Power supply: DC13.6V / Mesurement Frequency: TX 162.500 MHz, RX 162.125 MHz / Internal resister of the volt meter: 50 kΩ/V


LOGIC UNIT
Power supply: DC13.6V
Mesurement Frequency: TX 162.500 MHz,
RX 162.125 MHz
Inner resister of the volt meter: 50 kΩ/V
Mount B-Side
to RX UNIT J2
to TX UNIT J3
to FRONT UNIT J2
to FRONT UNIT J1
to REG UNIT J13
to REG UNIT J14
to OPTIONAL UNIT
to OPTIONAL UNIT
to JACK1 UNIT J3
to JACK2 UNIT J3
to JACK2 UNIT J2
CPU
IC33
HD64F2238BFA13
IC40
BU4094BCFV
IC39
BU4094BCFV
IC41
BU4094BCFV
IC35
BU4011BFV
IC36
BU4011BFV
IC37
HN58X2464TI
IC34
S-80842CLUA
IC38
S-812C50AMC
IC53 TC4W53FU
IC32 TC4W53FU
IC42
TLP121
IC43
TLP121
IC44
NJM2125F
Q7 XP1214
Q8
XP1111
Q9
XP1111
Q10
XP1111
Q11
XP1111
Q18
XP1114
Q19
XP1114
Q20
XP1114
Q24
2SJ377
Q17
DTC144EE
Q3
DTC144E
Q2
2SC4081
Q44
DTA144EE
Q49
XP4311
Q50
XP4311
Q5 2SA1576
Q6
2SC4081
Q4 2SC4081
Q25
2SC4081
Q45
2SA1362
Q48
IMZ4 T108
Q26 XP4311
Q27 XP4311
Q28 XP4311
Q29 XP4311
NOTE :
Voltage line
TX line
RX line


CHASSIS UNIT
AC IN
POWER
DC SUPPLY
EP1
PS 0V
PS 15V
M SW
W2
W4
REG UNIT
AC POWER SUPPLY: 15.4V
DC POWER SUPPLY: 0.0V
IC6
TA78L08F
IC7
TA75S393F
IC11
TA75S01F
Q1
2SJ533
Q4
2SJ533
Q5
2SD1664
Q7
DTC144EE
Q8
2SJ553STR
Q9
DTC144EE
IC1
NJM7809FA
IC2
NJM7809DL1A
IC3
TA78M05F
IC4
TA78DL12AF
IC9
NJM2107F
D7
FCH30A03L
D4
FCH30A03L
D2
1SS355
D3
DSA3A1
D8
MA8047 M
D6
MA29W B
EP2
MMZ1608Y102BT
RL2
ACB32101
S1
RXE160
F3
ATC-20
F6
ATC-20
8.0V
AC POWER SUPPLY: 15.0V
DC POWER SUPPLY: 13.6V
AC POWER SUPPLY: 0.0V
DC POWER SUPPLY: 5.0V
AC POWER SUPPLY: 14.8V
DC POWER SUPPLY: 13.6V
BATTERY
BATT+
BATT−
to PA UNIT EP2
to LOGIC UNIT J5
to PA UNIT EP1
to LOGIC UNIT J6
REG FAN
PA FAN
PA F12V
12.0V
9.0V
5.0V
2.8V
VCC1
VCC2
M9V
M9C
L9V
A5V
REGTEMP
PSD
GND
AC power supply or DC power supply: 13.6V
Mesurement Frequency: RX 162.125 MHz
Internal resister of a volt meter: 50 kΩ/V

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